Southern California's Computer Magazine

# MICROTI··S

**FREE**

February 5, 1997 • #161   Visit Our Web Site: www.microtimes.com

**Parental Controls:**
What Are They Really Blocking?

**Stopping Spam:**
Getting Rid Of Unwanted Email

Tom Steding and
Phil Zimmermann
of Pretty Good
Privacy, Inc.

## PGP Inc.: The Business Of Privacy

Phil Zimmermann: "PGP has become a
worldwide de facto standard without
any resources. Imagine what would be
possible with a company behind it."

# Consistent quality.
# Award winning components.
# One great computer.

*Mitsumi 104 Key Windows® 95 Compatible Keyboard*

*Mitsumi 12x CD-ROM Drives*

intel inside
pentium

When building systems for the long haul, you have to use components that are built to last. That's why we build our TOUCH systems (Touch P133MD pictured above) with Intel Pentium® Processors and Mitsumi peripherals. The Mitsumi ZW104 keyboard features a new ergonomics design, Windows 95 compatibility and 3 special keys dedicated to navigating in Windows 95. And Mitsumi 6X CD-ROM drives offer greater performance making games run better,

*Mitsumi Wireless Mouse*

# MITSUMI
*Power in Peripherals™*

*Mitsumi Floppy Drives*

video files play smoother and software installations finish faster. Mitsumi's volume production gives you consistent quality and superior performance at unmatched prices. This makes Supercom TOUCH systems some of the most reliable systems around. So if you're looking for systems that are built to last with components to match, call Supercom today at 1-800-888-1888 for reliable high performance computers.

# Supercom
# 1-800-888-1888
http://www.supercom.com

Dealer/volume sales only.

Call for the dealer nearest you!

# COMPARE THE DIFFERENCE.

INTERNET TECHNOLOGY THAT MAKES A DIFFERENCE!

STEP into the
# Asynchronous
# Transfer Mode

(ā sin' krə nəs trans fur' mōd)
A powerful Internet technology that enhances network
capacity and increases speed.

**You don't have to understand it.**
**Simply KNOW who's the BEST!**

# Primenet [SM]
<Services for the Internet>

THE INTERNET PROVIDER THAT CAN HANDLE THE COOL STUFF! **Faster.**
UNLIMITED USAGE JUST $24.95 PER MONTH*
TOLL-FREE TECHNICAL SUPPORT AVAILABLE 24 HOURS A DAY, 7 DAYS A WEEK.
7-DAY MONEY-BACK GUARANTEE.
**Better.**

Fast, easy sign-up!

**Call: 1-800-4-NET-FUN**

*One-time set-up fee. Some restrictions may apply. Dial-up access accounts are not intended as continuous, dedicated connections.

P   MICROTIMES MANUFACTURER'S SHOWPLACE • FEBRUARY • 1997

# Contents
# MICROTIMES

# Contents
# MICROTIMES

Now It's Easier Than Ever To Find MicroTimes! See Page 232 For The Location Nearest You!
Or Call 1-800-720-0727

John C. Dvorak


Peter John Harrison


Jonathan E.


Paul Hoffman


Bennett Falk


Tony Reveaux


Royal P Farros


Birrell Walsh

**John C. Dvorak** writes many columns, hosts the "Software/Hardtalk" radio show, and finds inspiration in strange places.

**Jonathan E.** has worked with desktop multimedia since 1988. His USPS mailing address is c/o SoundSwell, 54 29th St., Richmond, CA 94804. His email address is jeve@well.com .

**Bennett Falk** is the author of The Internet Roadmap, now in its second edition. By day, he works at Sybase in Emeryville.

**Royal P. Farros** is founder and president of iPrint, Inc, the Discount Printing & CyberStationery Shop of the Future. Formerly co-founder and chairman of T/Maker Company (purchased by Deluxe Corporation in 1994), Farros helped create such award-winning software as PFS: First Publisher, WriteNow, and the ClickArt series of image portfolios.

**Peter John Harrison** is a San Francisco Bay area-based communications and connectivity specialist who has worked for a variety of companies, including Xerox PARC and Microsoft. In addition to editing the MicroTimes Networking column, Peter writes books on the Internet and networking, and has been a contributing editor or writer to HotWired magazine and LAN Times. You can contact Peter by email at peterh@well.com and find out more about him and his professional, literary, and personal history from his Web site, http://www.dcb.com/pjh-home.htm .

**Paul Hoffman** is an independent consultant who's been writing about computers for over fifteen years.

**Ed Kahn** (edkahn@well.com) is a folklorist who maintains a strong interest in computers and lives in the East Bay.

**Jon Lebkowsky** is a freelance writer and activist based in Austin, TX. He hosts a weekly activists' forum at HotWired's www talk.com and the Austin conference at Electric Minds (www.minds.com), and is currently working on a book for MIT Press.

**John S. Quarterman** (jsq@tic.com) is the senior technical partner of MIDS (Matrix Information and Directory Services) and editor of Matrix News. He is a longtime observer, consultant, and writer on the matrix of electronic networks.

**Michelle Rafter** writes Internet columns for Reuters and the Chicago Tribune Web edition. Reach her at mvrafter@deltanet.com .

**Bill Gram-Reefer**, based in Concord, CA, is president of WORLDVIEW, specializing in connectivity and communications. He has been writing about Macintosh computers since 1984.

**Tony Reveaux** is a San Francisco-based consultant who writes the "MediaScan" column in Film/TapeWorld and teaches at San Francisco State University's Multimedia Studies Program. He can be reached via the Internet at tonyr@dnal.com .

**David A. Simon, CPA** (M.S., Taxation) is in tax and accounting practice in Oakland, and is co-author of Business Contracts: Forms and Tax Analysis (Wiley Law Publications). His clients include professionals and businesses throughout the state. He can be reached at (510)893-5753.

**Birrell Walsh** (birrell@well.com) is a contributing editor for MicroTimes and a freelance writer for BYTE and other magazines.

BY PAUL HOFFMAN

# Industry Insights

## NC vs. PC: Preventing Premature Death Of The Network Computer Market

# The Network

Computer, better known as NC, will see its second round of hype and hope this year after last year's introduction that went nowhere

Already, many computer industry pundits ■■ claiming that there is no hope for the NC, that it is as useless as the dumb terminal was ten years ago, and that no one would want to buy one. Other people (and some companies) are still saying that this is the Next Big Thing for the computer industry and will be bigger than PCs within a few years. Both groups could be killing the NC before it gets ■ chance to be adopted by what will probably be a niche market (that could be a large niche indeed).

Everyone's just guessing at this point, because NCs have just now started shipping, and we won't see any significant production until much later this year. But the mere existence of NCs won't convince anyone to buy them; they'll have to prove their value over PCs or else they'll end up as just another failed attempt to usurp the Wintel monopoly. To predict that they'll become popular quickly is ridiculous, given how entrenched the PC is in our mentality, however, to predict failure before the first few years is also silly, because NCs will certainly evolve in ways that are unguessable before they've been deployed.

## The Ill-Defined Beast

The first problem any new technology encounters is to define what it is, how it is different than what we have now, and why what we have now can't just transform into the new technology

without having to buy new systems. The Network Computer, announced last year by a group of companies who basically wanted ■ piece of the market presently owned by Microsoft and Intel, is already having some identity problems, given the different players who want to make the NC "theirs."

Basically, ■■ NC is a computer that ■ much cheaper than a PC because it has no hard disk,

> **THE MYTH THAT MODULAR TOOLS WILL ENABLE PROGRAMMERS TO CREATE USEFUL SOFTWARE, TAILOR-MADE FOR INDIVIDUAL USERS OR DEPARTMENTS, AT COSTS LOWER THAN COMMERCIAL SOFTWARE, HAS BEEN AROUND FOR AT LEAST A DECADE. UNFORTUNATELY, THIS HAS NEVER BEEN THE REALITY.**

no floppy drive, and is easier ■ use than today's PCs. The software used on an NC gets loaded into it over a local area network each time the NC ■ started up. The NC's operating system, ■ you ■■■ call it that, is a Java virtual machine, and all the programs that get loaded onto the NC ■■ Java programs. The idea is that there are many people who have PCs sitting on their

desks who use them for only a small number of tasks, and those tasks don't require the expen-■■■ hardware in the PC, nor the time it takes to train the person just to use the system.

Thus, the cost savings for NCs come from two areas, lower initial cost due to cheaper hardware, and lower lifetime costs due to lower training and software costs. If you can reduce these expenses, the NC becomes attractive to corporations when they have to replace PCs or when they want to put computers on the desks of more employees who do not need to use them much. You ■■■ buy a low-end PC, including ■ monitor, for $1000; it will take a lot to convince people to buy ■■ NC, including a monitor, for only 25% less.

## The Real Hurdle: Actual Cost Reduction

Without the reduced cost, very few companies will even consider NCs. For the last fifteen years, everyone from the information services directors ■■ down to low-level managers has been inundated with stories about why PCs are good and necessary ■■ order to sell them something that isn't ■■ powerful ■■ a "real" PC and lacks ■■ the expandability of a PC will require proof of actual savings from using NCs

That's not as easy ■■ it might sound. Even if NCs cost ■■■■ less than low-end office PCs, that's a small number relative ■■ the estimated cost of software, support, and training that goes into a PC and its user during the three ■■ five years that the PC is ■■ someone's desk. For NCs to ■■ convincing, they have to show significant lifetime cost reduction, and this is where the

### Industry Insights *continued.*

people who make estimates get a bit fast and loose with their numbers.

For example, the cost of software over the ▓▓ of a computer has to include the cost of upgrades. As we all know, the days of free upgrades for significant business software are long gone. People who use Microsoft Office are now just gearing up for ▪ major round of paying Bill Gates for ▪ bloated, disk-hogging upgrade that they would probably rather not make. Sure, there will be some useful new features, but by and large most people ▬▬ happy with what they have now. Upgrading commercial NC software will probably be just as costly, and therefore

NCs will not show any savings over PCs.

One of the probably overstated cost savings for NCs is supposed to be the fact that in-house programmers will create the software that most corporate users run. This myth has been around for at least ▪ decade: Modular tools will enable programmers to create useful software, tailor-made for individual users ▬ departments, at costs lower than commercial software. Unfortunately, this has never been the reality. Programmers are expensive, and even with great modular tools, creating ▪ useful application that will be used by hundreds of people can take many months. This is not to say that custom software is no good, just that it is likely to be more expensive than off-the-shelf applications, and custom updates are not likely to be very cheap, either.

The remaining cost items are training and support. The NC supporters are quick to point out how hard it is to train people to use Windows 95, which is a valid point. Supporting novice users who have to use Windows 95 is also relatively expensive, given how many things "just go wrong" and require support from the technical staff. On the other hand, saying that the NC will be easier to learn ▬ support ▬ ▬ unsupportable argument until we see what the systems will look like when they're booted up, what the applications will look like, and so ▬▬.

### Where N▓▓ Might Catch On

Even if the lifetime cost of an NC is the same as ▪ PC, they might still find a sizeable niche market in companies that want to put some sort of computer on every desk, but have many of the users who will only use these computers for ▪ small number of tasks. You might ask, if the lifetime cost was the same, why wouldn't the company just buy ▪ cheap PC that might later be useful if the user gets more advanced? Two words: technical support.

It is unlikely that NCs will be harder to support than PCs running Windows 95, and there's a good chance that they will be at least somewhat easier. Even without proof of lower support costs, many companies will be willing ▬ try out NCs because their support costs are going through the roof, and it is almost impossible to hire good tech support people. IS managers are catching a lot of grief for the lack of timely support that many of their users get, and they're willing to experiment with almost anything that might reduce their burden.

SO

MICROTIMES • FEBRUARY 5, 1997  21

# Solutions

BY ED KAHN

## Laptops
### Making The Best Of A Bad Backup

**When selecting** products to review, I go out of my way to find products that I can recommend. My reasoning is that you want to know which of the new products are good. After all, the market is flooded with so much that it is impossible for anyone to keep up with it all. So I try to find things that work well and answer a real need.

From time to time, however, I get a product that does not live up to my expectations. I feel some of the products are simply bad and don't bother to write about them. Other products manufacturers have simply introduced prematurely. These are usually worth keeping an eye on because, if they come from a reputable company, the problems will be fixed and the product will turn from a sow's ear into a silk purse.

This month, I am focusing on just such a product—one that has great potential but still needs a little more work Months ago, I received a notice that Seagate Technology was introducing what seemed to be a revolutionary new tape backup product. As a reliable company with a track record for offering good products, I waited anxiously for the actual product to arrive.

For me, computers have become more complex, the problem of safe backups has become increasingly unmanageable. In the old days, I had a simple tape backup drive installed in my computer and once a week I did a complete backup, then on the successive days of the

week I did an incremental backup saving all of the files that I had modified that day. Restoration was simple. A directory of the tape looked like a regular directory I might get with any of a variety of optional software products. I could see the contents—from directories to subdirectories and finally to individual files. I clicked on the

ones I wanted to be saved or restored, hit another key and the job was done—except for the slowness of the tape itself.

Windows changed all that because it was no longer possible to do automatic backups while programs were opened. Automatic backups became a thing of the past and backing up my hard drive became a less efficient task. Even though software promised to fix this, it never worked well for me. Plus, as hard drives became larger, the problems became even more complex and small tape drives no longer did the job.

Offering a solution, Seagate recently announced the introduction of their TapeStor 3200. This looked to be a revolutionary product. First, the hardware attaches to the parallel port of your computer, making it suitable for backing up portable systems as well as desktop units. A pass-through system allows you to reconnect your printer to the TapeStor, so you do not have to switch between the tape and your printer The tape drive itself looks more like a tower than a parking lot, to extend the real estate metaphor. In other words, it sits vertically on your desk.

> For the moment, however, I must rate the TapeStor 3200 as a product to keep your eyes on.

## Business Solutions

**Laptops** continued

The drive holds a gigantic 3.2GB of data with the built-in compression software. Unlike other tape backup systems, however, this product shows up on your directory as another drive. So now instead of showing only drives A through D (if you have ■ CD-ROM player, for instance), you now show an additional drive. Backing up is ■ simple as dragging files, directories or the whole hard drive icon over to the new icon. There ■ no pretense of automatic backups.

Subsequent backups are incremental as long ■ you are using the same tape. If you want another full backup, you must change tapes ($37). The most innovative aspect of the design of this software ■ that ■ portion of your hard drive is dedicated ■ a staging area that holds files until you transfer them to tape. The result is that as you work you can flag items to be backed up or you can do ■ incremental backup of a hard disk and it will transfer to the staging area almost instantaneously. At your leisure you can then transfer the staging area to the tape.

■ of this sounds great. However, opening the box I found notices explaining irregularities with the software. One notice said that there was ■ conflict with Hewlett-Packard LaserJet V series printers and suggested work-arounds. As I got further along, one of the tech support people informed me that there were problems with other Hewlett-Packard printers ■ well. Somehow, not all of the compatibility issues were resolved before the product was shipped.

I installed the software and ■ pleased by how easily it worked. In the installation, there ■ a choice that you must make depending upon whether your computer has an Enhanced Parallel Port (EPP) or not. The recommendation is to install using the normal setting and then, after everything ■ working properly, to uninstall and reinstall for the EPP. That is where my problems began. I was not able to get the software reinstalled. I spent hours on the phone with technical support people. Eventually, with help from ■ top engineer who worked on the development team, we were able to solve the problem. It is unlikely that you will have the same problem, but if you do I feel confident ■ saying that the people in technical support will work with you until the problems are resolved.

I would not spend ■ much time describing the good design concepts that are built into this tape backup system if I did not think that Seagate will eventually get these problems solved. For the moment, however, I must rate the TapeStor 3200 ■ a product to keep your eyes on, but hold off on buying. I think the hardware ■ wonderful and that even if you buy the product now, in time new software will be released that will solve all of the problems I encountered.

There is so much pressure to bring new innovative products to market that software companies—especially software companies—routinely release products before they are really ready for the market. This phenomenon is found from the biggest to the smallest companies. As a reviewer, I frequently see software that simply is not bullet-proof. This product, however, promises to be exceptional.

**RESOURCES:**
TapeStor 3200, $249
Seagate Technology, Inc.
1650 Sunflower
Costa Mesa, CA 92626
1-800-626-6637
(408)438-6550

# Solutions

NETWORKING • BY PETER JOHN HARRISON

# Java To The Rescue!

## Installing And Maintaining A Stable Applications Environment Across The Corporate Network

# Network

administrators spend a lot of their time tuning and maintaining their network environment. Keeping ahead of hardware problems, managing disk space, doing backups, and so on is a big job—but what often takes even more of a network administrator's time is making sure that the various application programs available to LAN users all work together.

Keeping the end-user application environment working smoothly is a challenge for a number of reasons. Newer releases of a software product often implement features that older releases do not have, making it hard for users of older versions to share files created by users of a more current release. There are also often different release schedules and sometimes different feature sets for Windows, Macintosh, and UNIX versions of a given software utile.

Sometimes the most recent releases of a company's standard applications are not available for every platform on the LAN, too. This problem affects not only the Macintosh and UNIX users on mostly-Windows networks, but also Windows 3.xx users who share files with people using Windows 95 or NT.

Add to this general anarchy the fact that many desktop application programs are installed on each individual computer's hard drive. So, in order to update the software, the network administrator has to physically travel to each computer's location. These and other factors make installing and maintaining a stable applications environment and meeting the needs of a LAN's end-users a real challenge. And the nature of that challenge only increases as LANs increase in size and expand to different locations.

To help ease the pain of maintaining end-user applications across a LAN, many software companies sell "office suites," that include a complete set of common desktop applications, like a word processor, spreadsheet, business graphics, Internet browser, and email programs. Office suites ease the application maintenance hassle by at least collecting the most commonly needed software into a single package that administrators can install and update all at one time, but that only partially addresses the problem.

What LAN administrators really need is a package of applications that work on all the computing platforms on their LAN—Macintosh, UNIX, and Windows 3.xx, 95, and NT. They also need these applications to be designed from the ground up so that they are easy to maintain and update from a central server.

Now enter Java. If you have been watching developments in all things Internet, you know that

## What LAN administrators really need is a package of applications that work on all the computing platforms on their LAN—Macintosh, UNIX, and Windows 3.xx, 95, and NT.

Java is a computer language that lets programmers "embed" application programs in Web pages. Up till now, Java "applets" have mostly been used to incorporate elements like buttons that light up and animations that move around into Web page designs, but Java is capable of much more.

Java is, in fact, a full-blown computer language that in many ways resembles C. Like any full-blown computer language, programmers can use Java to design complex application programs, like word processors, spreadsheets, etc. Unlike other computer languages, programs written in Java can be run on a variety of computing platforms without being re-written or compiled; the only requirement is that the client computer have a Web browser that understands the Java language.

Network-centric Java-based applications have other advantages, too. Since Java is designed to work exclusively in a networked computer environment, it makes it easy to take advantage of the features that a network has to offer. So LAN users can more easily take their Java-based desktop with them when they move. Telecommuting can be easier, too, because users can dial in from home and log on to the same set of tools and desktop that they use at work.

Network-centric Java programs can also make backing up and safe storage of user data easier. Because the Java application suites are directly installed, configured, and maintained by the network administrator, the files they create can be forced to reside on a network server, too. With all user files safe on the server, data can be easily and consistently backed up.

And there is more good news. Java-based applications have spawned a new concept for inexpensive "network computers" and "thin clients." Network computers and thin clients do not have disk or floppy drives or a complex operating system, only a network cable connection and enough hardware to run an advanced, Java-capable browser. Not having all that expensive hardware and software significantly cuts the cost of making a Network Computer, without compromising its functionality for the majority of a LAN's users, slashing per-seat hardware purchase and maintenance costs. Another useful feature of thin clients is they are useless without the LAN they connect to, making them perfect for environments like schools, libraries, and other local

# Solutions

**Networking** *continued*

tions where computer equipment sometimes sprout legs and walk off. Even home computer users may discover uses for inexpensive Internet Computers that have a printer port and removable disk drive, but software and Internet access services provided by their cable TV company.

Before you can hope to take advantage of network computers, thin clients, and all the administration advantages network-centric computing offers, you need software. Without robust software that replaces traditional word processors, spreadsheets, and other tools, network computers are nothing more than a fancy toy for browsing the Web. So when can we expect to start seeing robust, Java based "office suites" that will meet the needs of our end users?

Sooner than you think. The first of this new breed of application program is taking shape at Corel Corporation in Ottawa, Canada. Corel's upcoming Office for Java includes all the major tools in Corel's standard office ⸻ Corel WordPerfect for Java, Corel Quattro Pro for Java, CorelCHART for Java, as well as address book, calculator, notepad, time planner/scheduler and email applications.

An evaluation copy of Corel's Office for Java application suite, currently in "pre-beta" form, are available for download on the World Wide Web Office for Java ⸻ far from complete and far from perfect, but if you are a network administrator, you might try taking a look ⸻ them and how they work. I think you will be getting a glimpse of how network applications—from Corel and other software vendors—will work in the dawn of the next millennium ∎

## Pl

with s
accide
goto
and so
respo
sign th

Mo
a "pw
frenzy,
these
each t
more
naling
sage "

App
ment.
langua
those
interpr
statem
ports p
UNIX
ment.)

### Und

"Goto"
of the
is a ba
guages
guage)
to a ta
cuting

Hig
to wor
bound
must r
Highe

# Solutions

UNIX • BY BENNETT FALK

# Waiting For Goto

## An Historical Curiosity Seeks Its Purpose

# Playing around

with some shell commands a few days ago. I accidentally typed the command

    goto /tmp

and something unexpected happened: The shell responded with a secondary prompt ("?"), a sign that more input was expected.

More input was provided: an "ls" command, a "pwd" command, and then, with increasing frenzy, control-X, control-C, and control-Z. All these things were duly echoed back, and after each the still-unsatisfied shell prompted for more input. Finally a control-D was typed, signaling the end of input. Immediately the message "/tmp: label not found" appeared.

Apparently the C-shell has a "goto" statement. This, in itself, is not surprising; lots of languages have goto statements. Not many of those languages, however, are command-line interpreters that allow the user to execute a goto statement interactively. (DOS, for example, supports goto only in batch files, and among the UNIX shell programs, only csh has a goto statement.)

## Understanding Goto

"Goto" is the programming language equivalent of the "jump" instruction. The jump instruction is a basic control flow feature of low-level languages (machine language and assembly language); it's a way of getting a program to jump to a target location in memory and begin executing instructions found there.

Higher-level languages allow programmers to work with abstractions that are not tightly bound to the hardware on which the program must run. But there is a debt to be paid here. Higher-level languages evolved from their lower-level predecessors, and initially, it must have been practically unthinkable that the higher-level languages would not offer something like a jump instruction.

Goto statements have been a feature of higher-level languages for about as long as there have been higher-level languages. Harlan Herrick is credited with introducing a "goto" statement for FORTRAN in 1955.

In higher-level languages, the target for a "goto" statement is generally not a memory location, but a location in the text of the program: a line number or a label name.

The C-shell, for example, recognizes any line that consists of a single word followed by a colon as a label. A goto statement can jump to any label that has been declared in a shell script or in the shell's input.

## Further Explorations

To test this after my first encounter with an inadvertent goto command, a label was entered:

    /tmp:

After providing this label the command "goto /tmp" no longer prompted for more input. It seemed to "go away," that is, it produced no output and did not return another shell prompt. It

**GOTO STATEMENTS PERSIST, AND WE STUMBLE ACROSS THEM WITHOUT REALLY KNOWING WHAT THEY'RE FOR OR WHAT ALL THE FUSS WAS ABOUT. THE STAGE IS SET, ONE IMAGINES, FOR THE OTHER SHOE TO DROP AND FOR HISTORY TO REPEAT ITSELF. PERHAPS GOTO WILL COME BACK INTO FASHION.**

had, of course, not "gone away" at all. The command was simply looping. The label was immediately followed by a command to go to the label.

Strictly speaking, there is nothing magical about this, but when it is executed interactively, the shell must "rewind" its input to find a label that was typed before the goto statement. Even for someone who routinely exploits the C-shell's history list, the notion of the shell "rewinding its input" is likely to induce something like vertigo.

The C-shell article in the online manual does little to alleviate the sense of disorientation. "If the shell's input is not seekable and a loop is being read, that input is buffered. The shell performs seeks within the internal buffer to accomplish the rereading implied by the loop. (To the extent that this allows, backward goto commands will succeed on nonseekable inputs.)"

Naturally, "nonseekable input" includes anything a user might enter at a keyboard. "Seekable input" is a fancy term for "file" shell scripts are the most prevalent form of seekable input.

Eventually, control-C was used to interrupt the loop, and the C-shell prompt (which had been set up to record number of commands

# Solutions

since the beginning of the session) showed that the goto command had executed several thousand times in a few seconds.

## Goto Wars

In the latter half of the 1990s, the genuinely frustrating thing about discovering that a language you use has a goto statement is trying to figure out how this statement is to be used. "Goto", which was once necessity, is now something of a historical curiosity. Its use has been deprecated for so long that an entire generation of users has little notion of what the goto statement is for.

The most famous attack on the use of goto in higher-level languages came in March of 1968 (thirteen years after the introduction of goto statements into FORTRAN and a year or so before the first version of UNIX was circulated at Bell Labs: A letter from Edsger Dijkstra entitled "Goto Considered Harmful" appeared in the *Communications of the ACM*. (The ACM is the Association for Computing Machinery, and *Communications* is its monthly journal.)
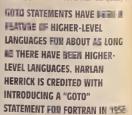
The letter began with a nod to the belief (already prevalent in 1968) that "the quality of

**GOTO STATEMENTS HAVE BEEN A FEATURE OF HIGHER-LEVEL LANGUAGES FOR ABOUT AS LONG AS THERE HAVE BEEN HIGHER-LEVEL LANGUAGES. HARLAN HERRICK IS CREDITED WITH INTRODUCING A "GOTO" STATEMENT FOR FORTRAN IN 1955**

programmers is a decreasing function of the density of goto statements in the programs they produce."

Dijkstra went on to lament the "unbridled use of goto" and to suggest that the 'goto' statement be abolished from computer languages. The text of a program, he argued, was an inaccurate index to its behavior at runtime. The "goto" statement would move the execution point to a different place in the program's text, but this might not be a sensible thing to do given the actual state of the process at run time. "The unbridled use of the goto statement has an immediate consequence that it becomes terribly hard to find a meaningful set of coordinates in which to describe the process progress."

Dijkstra's letter was the first shot fired in the structured programming debate (Simply stated, "structured programming" is the belief that you should be able to tell what a program does by reading its text. Usually this means organizing the program into functional modules with well-specified interfaces.) The ensuing clash of opinions became so heated that the editors of *CACM* resolved not to publish articles "taking so assertive a position against a coding practice."

# Solutions

## UNIX continued

In the wake of Dijkstra's letter, the phrase "considered harmful" was added to the permanent lexicon of the software engineer. In the intervening years, various programming practices (including C-shell programming) have been "considered harmful." Most recently, the Web has inspired a rash of practices "considered harmful."

In 1977, nearly a decade after Dijkstra's note, Guy Steele, Jr. (who would later become one of the authors of the Java language) wrote a paper with the unwieldy title "Debunking the 'Expensive Procedure Call' Myth or Procedure Call Implementations Considered Harmful or Lambda: the Ultimate Goto."

Steele's paper was a defense of structured programming and a rebuttal to the argument that using goto statements was somehow "cheaper" or faster than using a procedure call. This is, in some sense, a landmark paper, because the use of goto has passed from being "the way things are" to a matter of expediency.

Steele argues that the cost of procedure calls is a function of how they have been implemented, and that there are no barriers in principle to function call implementations that equal the performance of goto statements.

(Java, by the way, contains no "goto" statement, though it still supports the notion of declaring a label for a block of code.)

The passage of another decade saw the whole debate turn whimsical. In 1987, Frank Rubin submitted a letter-to-CACM form titled "'GOTO Considered Harmful' Considered Harmful" (CACM, March 1987, pp. 195-196), and in the International Obfuscated C Coding Contest for that year, an award for worst style went go to Spencer Hines for a piece of code that was essentially a fugue on the four letters of "goto".

Hines' source code was arranged in columns to call attention to the blizzard of four-letter combinations that could be made with the letters "g", "o", and "t". The program wasn't readable in the usual sense, but did compile and run. When passed the name of a source code file, it reported the number of "goto" statements found in the code. (Hines' program was only 21 lines long and contained 24 goto statements.)

Ten years later, we have exchanged whimsy for simple ignorance. Goto statements persist, and we stumble across them without really knowing what they're for or what all the fuss was about. The stage is set, one imag-

---

## RESOURCES:

The Association for Computing Machinery (ACM)
http://www.acm.org

Computer history (IEEE Computer Society Web Site)
http://www.computer.org/50/history/

Edsger Dijkstra
http://www.acm.org/classics/oct95

Spencer Hines
http://elwood.seda.sowi.uni-bamberg.de/fun/ioccc/1987/

Guy Steele, Jr.
http://www.neurop2.ruhr-uni-bochum.de/MIT_llt.html

# Solutions

# File Compression: Small Is Better

## ...And A Visit With The Dragon

## When I opened

my 900th .ZIP file, it finally occurred to me to wonder about the people who make the PKZip compression product. After all, this is the archiving tool that the DOS/Windows world has been using for years. Who is PKWare? What else do they make? Does anyone pay for it?

PKWare is located in Brown Deer, WI, which turns out to be part of Milwaukee. They make compression and decompression utilities for DOS, Windows, OS/2, and for the SCO, SUN, UNIXWARE, AIX, and Linux varieties of UNIX. For some reason they have no Mac products. They also sell DLLs so developers can include compression and decompression in other products.

PKWare has been in the compression business for years. They have made their name by distributing shareware and even freeware versions of their decompression utilities (i.e., anyone could get software to open up a .ZIP file). They figured that people who have a reason to compress data would be more willing to pay for compression software than would those who simply wanted to decompress the result. All of their products are for sale, though as with most shareware the prices are remarkably low.

I contacted PKWare and they sent me a copy of PKZip for Windows, v2.5. I then discovered that what I had thought was only a utility had three powerful uses: Bandwidth optimization, software distribution and backup.

"Too-big" has always been a problem in computing. In storage it has appeared as the perpetual battle between hard disk capacities and ever-more-huge programs. Bandwidth is just the latest version of the perennial issue. The term refers to how much information can be moved through a system in a certain amount of

time, so a modem receiving 28,800 bits per second has twice the bandwidth of a modem receiving at 14,400 bps.

Or does it? What if someone developed a way to get more information into less space? Back when people used pay-by-the-word telegrams to send messages, this became a sort of sport. "I shall arrive Wednesday at two in the afternoon sharp on the Southern Pacific train" would get compressed into "ARRIVE SP WEDS TWO PM." This represents a 66% condensation, from fifteen words to five.

You want to make sure that the compression is loss-less. You do not want to sacrifice any information at all. You must also be sure that the compressed message is not ambiguous.

> "Too-big" has always been a problem in computing. In storage it has appeared as the **perpetual battle** between hard-disk capacities and ever-more-huge programs. "Bandwidth" is just the latest version of the **perennial issue.**

"ARRIVE SP WEDS TWO PM" would not be good compression in a context in which "SP" might mean either "Southern Pacific" or "San Pedro," the Los Angeles harbor.

The problem of making very tight and loss-free compression is subtle, but it has immediate consequences. If the original message went as a telegram would have cost $10.00, the compressed version would only cost $3.34.

Another way to think about compression is that it increases the effective speed of a modem.

The five-word message goes through the modem in about one third the time it takes to send the fifteen-word message. If the same amount of information is really conveyed by each massive this means that the modem is being three times as efficient when it is working on the five-word compressed message. A modem carrying the compressed message and working at 28,800 bits per second is carrying as much information as one working at 86,400 bps; it is transmitting the uncompressed signal. Effective bandwidth is increased by compression.

I was grateful for the gain in bandwidth because I have been downloading ZIP files for years. The compression has been saving my connect time and storage space. But PKZip has other virtues. With it one can make a ZIP file which extracts (that is, decompresses) itself. I had occasion to distribute a program I had written in Visual Basic and I was pleased to see that the 19,456 byte file compressed down to a ZIP file of 5,477 bytes. That meant that both I and the recipients would save about 72% of our connect time.

My problem was that I could not be sure that all the recipients would have any software to unzip the compressed file. Not everyone had downloaded the shareware unzippers. But PKZip includes a utility that will turn a .ZIP file into an executable file. The utility adds code to extract the attached .ZIP file when the recipient runs it, placing its components into the desired directories. It can even run the decompression

# Solutions

### Small Office/Home Office *continued*

programs immediately, if both you and the receiver choose that option.

There ■ overhead, however, the self-extracting version of my little file turned out to be larger (at 22K) than the 19K uncompressed original. It was actually less efficient to send the self-extracting file than it was to send the uncompressed original. It would only be worthwhile to use this feature for those large zip archives which contain many compressed files.

One case where the small overhead of the self-extractor is worthwhile ■ for the distribution of a software package. PKZip can create "spanning" compressed files, which occupy more than one disk. As each disk fills up, the program asks you to insert another. The receiver will also be asked to change disks when decompressing. With ■ spanning, self-extracting file, you could send a complete software system to another person on a set of disks. The self-extracting part of the file would recreate the directory system of the original and place each file in the correct directory. It will register file extensions with Windows, if you wish, and ■ can create program groups in the receiver's Windows system. It is not the elegant and graphical installation system that some programs use, but if you want to distribute ■ complex software system cheaply this is a good way to go.

> *I had occasion to distribute a program I had written in* **Visual Basic,** *and I was pleased to see that the 19,456 byte file compressed down to a .ZIP file of 5,477 bytes.*

And finally, PKZIP motivated me to do something that I have been telling others to do for years: back up my files. We all know we should back up all our important data files daily. Somehow this good intention doesn't get carried out. The problem ■ that the amount of disk space needed to back up files can be huge.

I wanted to back up my writings. There were 351 files in the "document" directory and its subdirectories. They made up nearly nine and one-half million bytes. Uncompressed they would require seven disks to store. But after zipping, the compressed file was only a bit over two million bytes, and would fit comfortably on a pair of disks. The compression made it practical to do what I should have done long ago—make ■ backup copy of all those irreplaceable files.

So, PKZIP provided the tools to gain bandwidth, to distribute software, and to back up essential files. Not bad for $49.00.

## The Unrobust Dragon

There are some reviews I just hate to write. I wanted to dedicate this entire column to praise

---

# ONE MAN STILL SHAPES EVERY BOARD.

Bruce Jones has been shaping custom surfboards since 1960. His boards became legends, and in 1973 Bruce founded Bruce Jones Surfboards. Then, in 1994 he put a full graphic catalog of his boards on an EarthLink website. The rest is history.

"Being on the web changed our business. EarthLink gave the world access to us, and we discovered an international market for our boards that we were never aware of.

"Our site gets at least a thousand hits a day. Customers send us their questions and requirements electronically, and we're making sales over the net every day. We're selling to Japan and other countries to customers that never would have contacted us any other way.

"EarthLink is great! The service has been excellent and the prices competitive. It was no trouble setting up or signing on, and they have special technical support for corporate users."

National Dial-up Access
National ISDN
National Frame Relay
Individual Mail Services
Corporate Mail Services
Domain Name Registration
CGI, Java™, Shockwave™
AVI, Wave, Midi, Audio
Video Broadcasting (Web Casting)
Database Secured Transactions
Server Co-location
Virtual Private Networking (VPN)
Security, Firewalls
Electronic Software Distribution (ESD)
Electronic Data Interchange (EDI)
Secure Electronic Transactions (SET)
Internet Consulting
Project Management
Complete Enterprise Solutions



Get your message out. Call EarthLink Network now for a free Business Connectivity and Website consultation

## 800-511-2044

### Small Office/Home Office continued from page 56

ing DragonDictate, a software system that turns your speech into text. I wanted to be able to say something like, "DragonDictate is wonderful and sturdy. I wrote this whole column, hands-off, by dictating it into DragonDictate." I was moved by the ambition of the program, and by the public relations staff who were so helpful they even returned email on Thanksgiving Day.

Alas, I was not able to write my column with DragonDictate. It turned out that this ingenious, even inspired, software is highly vulnerable to hardware incompatibilities.

Because I have spent time working on recognition software myself, I have some idea just how difficult it is to emulate perception. It is not "human" logical reasoning but "animal" perceiving that defeats simple imitation. I recall my own delight when I was able to write a simple program to detect edges in a visual field, and that is one of the simplest sensory tasks.

Sensory systems must accomplish two difficult chores. They must separate the thing-to-

be-recognized from the background events in which it is embedded. And they must recognize what they have isolated out. These two tasks are not separate; recognition and separation-from-the-environment have to work together, and

> ## So, *PKZIP* provided the tools to gain bandwidth, to distribute software, and to back up essential files. Not bad for $49.00.

errors in either one can confuse the other process. That is why tigers and politicians use camouflage to avoid detection: It makes it difficult to recognize them by blending them into the background.

DragonDictate's task is the discrimination of words followed by recognition, a combination it

took evolution four billion years to accomplish. My computer system added an additional burden, and the Dragon just couldn't handle it. I did not have a sound board which was 100 percent compatible with SoundBlaster's sound card. It was advertised as being compatible, but it was not. In particular, my sound card was prone to noise. The noise was at a low enough level that the human ear would not dwell on it—that is one of the features of our animal hearing: We filter out constant background noise. Software is not yet able to do so successfully every time. So the DragonDictate software was fighting a noisy input signal.

A second problem was also due to hardware. DragonDictate gives you a headset microphone to use. The microphone supplied was overly sen

# Solutions

## Small Office/Home Office *continued*

sitive for my system. It therefore distorted the sound even more. They were kind enough to send a less sensitive microphone which reduced but did not eliminate, the problem. So DragonDictate had two handicaps before it even began.

As a result the Dragon had difficulty hearing me. It often mistook small bursts of noise for words, and made comic and sometimes frustrating attempts to interpret this random noise. Its most common mis-guess was that the spurious signals were the word "to." My documents were sprinkled with what looked like flute music. Some of the other mis-transcriptions were inspired in an oracular way: "figurwriting right to giv Energy Equipmented." Needless to say, I gave up the project of writing the whole column with DragonDictate alone.

DragonDictate is extremely vulnerable to system noise, to environmental noise, or to electronic noise from the sound board. If you work in a noisy environment, or if you do ___ have a supported soundcard I can promise you will be frustrated some of the time.

If I were one of Dragon Systems' publicists I would respond thus: "It is not fair to judge our software's performance by your experience. You yourself say your hardware is the problem."

> *Once DragonDictate has **separate words** to work with, its ability to recognize them is frequently amazing. Right out of the box it understands the **careful speech** of most American speakers.*

Well, yes, but... Microsoft must make MS Word usable on good keyboards and bad keyboards. It may not be fair to the manufacturer to insist that their software interpret sound that has come through a problematic board-and-microphone combination. But that is exactly the demand that many users will be making. Few of us want to buy new hardware to make software work.

Dragon Systems does have a list of supported sound boards, available ___ request. May I suggest you do not buy the product unless your board is on the list, or unless Dragon Systems tech support has assured you it will work.

And now for the good news.

DragonDictate is a very sophisticated piece of work. It has dealt with many of the difficulties involved in controlling a computer with out using hands at all. It does this by having many vocabularies. Some of them ___ application-specific and have many pre-made commands tailored to the program they accompany. Others ___ generic commands that move between programs, control the Windows environment, and manage DragonDictate itself. But the main vocabulary is for dictation: even the small edition recognizes 10,000 English words. Some recognize up to 60,000 words at a time, and there are specialized vocabularies available for law, medicine and business.

You must slightly separate your words when you speak. If you have wondered why Caine in the television series *Kung Fu* speaks so slowly

**ACCOUNTING** • BY DAVID SIMON, CPA

# Tax Research With Electronic Tools

## Not The Right Stuff For Every Office

# CPAs and tax

lawyers increasingly turn to CD-ROM-based computerized research tools, often referred to as tax services. Typically, these volumes of annotated legal analysis, commentary, and instruction cost thousands of dollars per set. They are also available at some public libraries, and so can be accessed by adventurous do-it-yourselfers seeking fast-and-easy answers to troublesome federal income tax problems.

Indeed, anyone who has used an Internet search engine such as Yahoo or Lycos will feel comfortable with the mechanics of CD-ROM-based tax research. Combining a large database with powerful search capabilities, these systems theoretically promise instant solutions to complex questions of tax.

## Don't Try This At Home

Sound too good to be true? Think again. Taxation is an explosive topic, with tax issues somewhat akin to a pipe bomb. To the untrained eye it can be fairly nondescript, characterized by a leaden dullness in a familiar shape. But just beneath the smooth, shiny surface of the CD-ROM is a knot of hidden technical interpretations, precedents, exceptions, and definitional devices, which could easily blow up in your face, rip through your business, and wreak secondary havoc on those innocent crowds whose lives and livelihoods depend on the predictable solidity of your operations.

Call me an early-middle-aged fuddy-duddy, but this CPA does not embrace CD-ROMs for delivery of most tax research and analysis. I certainly do not recommend it for do-it-yourselfers nor, in most cases, for everyday tax professionals.

In general, these CDs are targeted to small firms with few economic options. Larger firms with more in-house resources still luxuriate in traditional, paper services. A bone-chilling manifestation of these differences, publishers sell electronic subscriptions of limited utility to small practitioners while commanding premium revenues from the international accounting giants for collections of print services.

The emergence of CD-based tax services—lengthy compendiums of tax analysis—illustrates how technical publishers are in a position to define the market and impose overly refined and inappropriate software tools upon unwilling professional users.

## Office And Estate And Research

A visit to an average law library reveals a dominant chunk of real estate devoted to taxation literature. A single CD, of course, easily holds the same information stacked on a hundred feet of shelf space. Imagine the seductive savings that a small accounting office could achieve by condensing a large section of the local library into a small stack of CDs. Filing the loose leaf updates of a paper library alone requires a dedicated part-time clerical staff. Get a replacement CD in the mail, and you can cut back on both office space and employees.

Indeed, based on vendor claims, one would think that the possibility of performing

almost exclusively electronic, low cost, and effective tax research has become a reality. A 1995 survey conducted by the American Institute of Certified Public Accountants suggests that almost half of public accounting firms are performing at least some electronic tax research in just this manner. A recent article in the prestigious *Journal of Accountancy* observes

> "Although many CPAs still work with paper subscription tax services, thumbing through hundreds of bound pages, increasingly others are harnessing their computers to get answers to tax questions. Those who have turned to computers find they can do the work faster, cheaper, easier."

In practice, however, electronic services leave much to be desired. When a tax issue arises, the

> This CPA does not embrace CD-ROMs for delivery of most tax research and analysis. I certainly do not recommend it for do-it-yourselfers nor, in most cases, for everyday tax professionals.

first task for the professional is to frame and formulate the problem and determine the focus of the research. This might start with secondary sources, the so-called "tax services." These services annotate the law, and reduce IRS Code, rulings, regulations, and cases into decipherable English in a cross-referenced context. These legal compendiums are typically comprised of twenty to thirty-five big volumes, or hundreds of detailed portfolios. Skimming whole sections, you gradually appreciate the entirety of the issues, the scope and complexity of rele-

# Solutions

vant law Closely related topics can be persued and practice pointers picked up, as well.

By contrast, CD-ROM research starts by entering keywords and performing complex searches using Boolean logic (and, or, not, and near) and several sifting criteria. This requires the researcher to recognize ■■ answer if it comes up, if they are lucky enough to have framed the search fortuitously. Instead of providing breadth and perspective, this word-searching locates a specific phrase amid an ocean of information, then highlights it.

If the choice is made to skim whole sections of tax analysis on the CD-ROM to get an overview, this can easily become ■ tedious task of scrolling through screenfull after screenfull of text and digitally "flipping" back and forth.

Likewise, working with indexes and tables of contents equipped with hyperlinks to the text also sounds ideal. While the use of indexes has always been important for getting started, the problem with using hyperlinks for tax research ■ that ■ ■ narrowly focused and, in effect, places blinders on the user

The point of thumbing through those hundreds of bound, dusty, nonmagnetic pages is ■ increase perspective, explore well-reasoned alternatives, and reflect on planning opportunities, as well as pitfalls. To imply that traditional research techniques waste billable hours while expensive experts look for a needle in a haystack perverts the ordinary understanding of prudence and due diligence. It just don't sit right with me.

Referencing on disk is fine for those occasions when you just need to check ■ specific citation or pull up some precise language. But would you really want a tax advisor whose understanding of your transaction ■ dependent on a Boolean word search?

For an experienced and sophisticated tax advisor there ■ no substitute for the comprehensive understanding that comes from spreading ■ few books and portfolios across the desk,

digging, and ruminating on ■ particular situation. Total reliance on automation results in ■ work product that is perfunctory, less critical, and devoid ■ the human perception ■ tax as an organic mosaic rife with interpretive opportunities for the informed imagination of the mature practitioner. It is ■■, not SpellStar

> To imply that traditional research techniques waste billable hours while expensive experts look for a needle in ■ haystack perverts the ordinary understanding of prudence and due diligence.

Accounting *continued*

## Awkward, Messy, Stale

Press some users and they will admit to less obvious inefficiencies as well. You lose time trying to effectively review long treatises onscreen. After identifying the necessary excerpts, you

> While the use of indexes has always been important for getting started, the problem with using hyperlinks for tax research is that it is narrowly focused and, in effect, places blinders on the user.

end up waiting for those sections to print and then work from hardcopy anyway—but without the surrounding context.

After all that printing, you now have a stack of pages—none of which are neatly bound or indexed. They can quickly become disorganized and misshuffled. As work progresses, the genetically neat practitioner is driven to sorting those piles into a growing collection of manila folders, and eventually it's time to rehire that file clerk.

When I research, I move from the books and articles on my desk to the word processor or other application on my computer desktop. When I pull the CD-ROM into the act, I invariably fall into the unproductive habit of excessively cutting and pasting from window to window, because the reference material would otherwise disappear from the desktop.

Another drawback is that vendors don't update CDs as frequently as their paper services. The reasons are easy to see. They might charge $1,500 to $2,000 for an annual subscription per service. A

library may include many services. With so many CDs in circulation, extra sets of those pricey copyrighted materials are likey to fall into the hands of non-subscribers. Under a typical license arrangement, therefore, the vendor will issue a complete new set of CDs periodically, but only after the customer returns the second to the last issued set. This arrangement ensures that unauthorized CDs get destroyed. To allow time to swap old disks for new, CD services are updated only about half as often as paper services.

## It's Not The Media, Stupid

The cornerstone of traditional tax research, which CPAs and lawyers perform, is a wide assortment of expensive subscription secondary source materials—so-called tax services. Having these resources in-house enables a practitioner to conduct quick yet thorough studies. From these secondary sources, primary materials such as Code, court cases, and rulings can be identified

BY ROYAL P. FARROS

# The Making Of An Internet Business: Part IV

## How To Save The Other $995,000 On Your Next Startup

# In last

month's article we discussed how to stretch dollars, with a goal of saving $1 million on your next startup. We began with "small" stuff... well, small if you're already off the ground, but big if you're just starting out. We've got to find a way to save another $995,000, so it's time to tackle bigger-picture items.

### Spend More To Save More

One of the tenets of saving money is a willingness to roll up your sleeves and do work where you can—unless of course, it's just stupid to do so. Case in point: Let ADP (Automated Data Processing, http://www.ADP.com) or some other payroll service handle your payroll processing. Yes, you can do payroll yourself. Yes it will *seem* like you're saving money. Yes, you'll spend *a lot more money on aspirin*, and end up wasting a lot of time to boot.

Same goes with buying an accounting system. Bite the bullet. Buy and use one. As my operations person says, "Unless you can keep track of what you spend, you'll never know how much you're spending." Well, that is, until it's too late.

Ditto with purchasing computer equipment. It's very tempting to buy the "discount-of-the-

week" computer, but factor this into the equation: Sooner or later, all machines break. It's great when it's later, but you're starting a business, so you have to *plan* on it being sooner.

When you have problems with your computer, what kind of life preserver—um, I mean warranty agreement—can you cling to? When will you get your machine back? Does your computer dealer have loaner equipment? How far will you have to go to drop off and pick up the machine? If all hell breaks loose, can you get a total refund within 30 days of purchase? And the final, big question: How long will you have to wait on "hold" to talk to a live person?

Brrrr. Better to spend a bit more and build a good relationship with a solid, conveniently located dealership. The alternatives are costly. With this said, how do you find a solid dealership?

Ask everyone you know with a PC. Ask them if they've had problems. Ask them if they felt their dealer was responsive. Then ask the prospective dealer "What happens when my monitor breaks... can I get a loaner?" Is the repair time guaranteed? Look 'em in the eye and say, "If something goes wrong, how are you going to help me fix it?"

(Biased Side Note: If you're new to computers, buy a Macintosh. Period. Doesn't matter what you read in the papers about which foot Apple has shot itself in this week. Something that matters in our pursuit of the cost-effective business is how little time we waste. If you're new, buying a Mac is a real time-saver.)

### Ask And Ye Shall Receive

Just because I'm suggesting you work with a reputable and convenient computer dealer doesn't mean I'm suggesting you should pay "retail". No way! Get three or four bids for every piece of equipment you buy every time you buy equipment. Let people know up front that you're getting bids. This will let the computer dealers know that they should be on their best behavior. This will also give you a good sense of what's a great price.

In this highly-competitive marketplace, knowledge is power. I haven't met a successful computer dealer yet that wouldn't match—or at least come close to—the best legitimate price you find.

> If you're new to computers, buy a Macintosh. **PERIOD.** Doesn't matter what you read in the papers about which foot Apple has shot itself in this week.
>
> Something that matters in our pursuit of the cost-effective business is how little time we waste. If you're new, buying a Mac is a real time-saver.

### The Making Of *continued*

If you're really small, consider this: Computer companies generally blow out their old inventory to their employees at drastically reduced rates. If you know anyone working at the hundreds of computer hardware companies residing in the Valley, you might ask if they can get you such a discount. For a few computer set-ups—with a good warranty and reasonable proximity to the repair depot—the savings will add up in the thousands. (Tip: Remember to be eternally grateful to your friend for doing this.)

While we're discussing negotiations, don't forget to negotiate for services like Ma Bell. I know a guy who got almost $2,000 in phone credits pitting AT&T against MCI, and, believe it or not, MCI Residential vs. MCI Business. My friend was in

stitches: "I really didn't do anything but sit back and watch these guys try to crush each other." I saw him laughing all the way to the bank. Really.

### And Software, Too

Just a quick one on software that will save you a bundle: Everyone gives away everything for free

> Get three or four bids for every piece of equipment you buy every time you buy equipment. Let people know up front that you're getting bids. This will let the computer dealers know that they should be on their best behavior.

on the Internet... well, at least for a "trial" period. From free email programs to free hard disk

defraggers to free server software. Take full advantage of this.

This is good business for software vendors because you'll: (1) eventually buy the software because you'll get tired of downloading and reinstalling the trial version month after month. (2) go out of business but still tell all of your friends what a great piece of free software you used (and maybe they'll have a better shot at staying in business). Software vendors know that there's great strength to an installed base, whether paying or not. (Just ask Netscape.)

Don't discount the free stuff you get with PCs and Macs these days. either: I do as much writing as anyone I know, and I use WordPad on my Windows machine

# Business Solutions

## The Making Of continued...

and the $29 WriteNow for the Mac. (Rich Text Format gives me all the cross-machine compatibility I need.)

### Home Is Where The Office Is

The easiest way to start a business is from home. In the past, this might have seemed like an "unprofessional" option. Today, it's downright high-tech.

And no doubt about it, depending where you're located, you'll save between $1 and $3 a square foot. For a 1,000 square foot office, this is between $1,390 and $4,170 a month.

Did I do the math right? If you totally play by the rules, you can deduct this office space from your income taxes, about 39% between state and federal. (As discussed in the previous article, yet another question you can ask lawyers and accountants you're interviewing.)

Tip: Don't try to run your telephone, fax, answering machine, and modem from one telephone line, even if it is theoretically possible to do. Even if someone bets you. It's a long, ugly story. Consider yourself saved.

### The Office Is Where The Office Is

If you need more space, here is what appears to be a well-kept secret. You can find professional office space for under $1/sq. ft. in the Bay Area. Office space that you can rent month-to-month. Office space that might already be furnished. Office space that might already have a professional phone system installed. And the big one: Office space that might have T1 access included in the rent!

Have you fainted yet? I fainted just proofing what I just wrote.

There is this great concept that could make a big dent in that $995,000 we're looking to save. And that is the concept of a business "incubator."

Some bright people figured out that if they could help new businesses get off the ground, the surrounding community would benefit from the creation of additional jobs, the creation of additional taxable revenues, and the creation of a cutting-edge, "happening" community image.

But getting a fledgling business to take that first, professional step would be the challenge.

Enter the nonprofit business incubator that converts unused resources, like slightly-outdated equipment, slightly "roughed up" furniture, and between-jobs consultants, into a productive, professional, and most importantly, affordable office support environment. What's more, most of these nonprofit incubators also have tight connections into the venture capital and "angel" investor communities. We're talking full-service operations here.

To see if your locale has such an incubator (they're popping up all over the place), just call city hall. Or, you can get in touch with Jim Robbins (email: JARobbins@AOL.com , tel: (408)938-3921, http://www.sjsbc.org ), one of the czars of these things.

### How Do We Make It Over The Top?

As excited as I am about incubator space, the bottom line is that we're still $900,000 or so away from saving $1,000,000 on our startup. Assuming we're small and we won't get $900,000 in cost savings from

# The Business Of Privacy

### War Stories And High Hopes At PGP Inc.

> "In the information age, privacy has been taken away. The purpose of this company is to restore privacy in the information age."
>
> —PGP Inc. CEO Tom Steding

**T**hings have significantly improved," laughs Phil Zimmermann, who in the last year or so has gone from the threat of federal incarceration to a position ██ chairman and chief technology officer of PGP Inc. (*www.pgp.com*), a hopeful and well-funded startup in San Mateo (see cover story interview with investor Dan Lynch, Issue #156), founded last April.

For several years, Zimmermann has been at Ground Zero in an increasingly heated battle over encryption, which used to be an arcane subject, of interest chiefly to spies and mathematicians. Today it's an essential component of keeping private communications private ██ they wend their way over the global communication network—trade secrets, medical data, confidential discussions, etc.

At the heart of the controversy ██ the fact that various law enforcement agencies, accustomed to being able to tap phone lines easily, oppose the widespread dissemination of technology that frustrates their information-gathering abilities. Invoking the specters of Kidnappers, Child Pornographers, Drug Dealers, and Terrorists, forces led by Attorney General Janet Reno and FBI Director Louis Freeh, with the enthusiastic support of the Clinton Administration, succeeded in getting federal legislation passed that would require all manufacturers of networking and telephony products sold in the US to include a "back door" ██owing federal surveillance of traffic. Known as The Communications Assistance for Law Enforcement Act of 1994 (CALEA) or "Digital Telephony," this law remains in large measure an unfunded mandate though not for lack of campaigning ██ the FBI's part.

Another attempt ██ make surveillance easier, supported by the CIA, the NSA, and others, seeks to restrict the strength of encryption software exported from the US—in essence, software companies may not export encryption technology that isn't easily breakable. Meanwhile, unsuccessful attempts have been made (e.g. the now-notorious Clipper chip) to create an industry-wide standard that would offer strong encryption, with the caveat that a governmental agency would retain an archive

of all users' "keys," to be turned over to law enforcement when a warrant is issued.

As the night follows the day, Washington rings with calls for ever-stronger wiretap abilities when sensational crimes make headlines. Last summer, for example, the dual disasters of the Olympic bombing and the crash of TWA Flight 800 were enthusiastically paraded by the Clinton-Reno-Freeh contingent as proof of the need for such surveillance to stop terrorism. (They've been invoked rather less lately, as it becomes increasingly unlikely that either terrorism or the Internet was involved.)

Arrayed on the opposite side is a perhaps-unlikely alliance of civil libertarians and privacy enthusiasts with the high-tech industry. The former group ██ chiefly concerned with privacy protection (not only against the government but against unwanted snoopers in general); the latter is at least equally concerned with the marked reluctance of domestic and overseas customers to buy security products with a built-██ welcome mat for US law enforcement, particularly when foreign competitors unhampered by such restrictions ██ all too happy to sell robust crypto to all comers.

Against the backdrop of this conflict, Zimmermann wrote and distributed a freeware encryption program called Pretty Good Privacy in 1991. While it lacked █ good deal in ease-of-use, and subsequently landed its author between the Scylla of the federal government and the Charybdis of RSA Data Security (to this day, though PGP is now a customer of RSA, there is clearly little love lost between Zimmermann and RSA president Jim Bidzos), it also attained widespread popularity, garnered numerous awards, and became a de facto standard (For RSA's views on the subject, ██ sidebar on next page.)

We visited Zimmermann and two of his management team CEO Tom Steding and marketing vice president Linda Haves, ██ their new offices, where ██ discussed the amazing events of the past and PGP Inc.'s plans for the future.

* * * * *

**So Phil, how did you happen to get into ██ this?**

I was a software engineer in Boulder, consulting for the past twelve ve██s. In 1984, I was involved in the nuclear weapons freeze movement, and it was at this point that I decided to write a program that does what PGP does.

**Which is?**

To encrypt files using public key cryptography.

**Why ██ you think this product ███ necessary? In 1984 people weren't exactly obsessing about crypto.**

Well, in that year I was active politically, and I felt that grassroots political organizations, or peace and justice groups, needed to have cryptography ██ protect what I thought would be █ growing usage of electronic communication. The Internet wasn't █ big thing then, but I thought that sending files across modems was a good idea.

There was a lot of adversarial feeling with the government at that time—that was during the Reagan years. Reagan had done ████ things that gave the peace movement reason to think that protecting their communications was █ good idea.

As █ turned out I didn't start writing it right then; I was distracted by writing other software that was used at the time by a Political Action Committee for the nuclear freeze.

Then in 1986 a friend of ████ taught me how to do the arithmetic you have to do to do public key cryptography. In late 1986, I developed my first implementation using ███ RSA algorithm. At that time, my implementation was the fastest in the world. I also developed █ way of finding large prime numbers that was also faster than anyone else ██ the time.

But ███ this was not a complete application. This was RSA in a Petri dish.

**What ████ your relation to RSA at this time? Because I know that down the line, problems ensued.**

I didn't use RSA software I didn't use ███ thing from them, other than the algorithms published in academic literature These algorithms could fit neatly ██ ██ back of your business card; PGP has tens ██ thousands of lines of code ██ there's a big difference between what I used from their academic papers and what I actually implemented.

I did ██ Jim Bidzos in late 1986—he ████ to Boulder to meet with a friend of ████ who was in Boulder teaching ███ this arithmetic. He also brought with him some software that his company had done called MailSafe and demoed it for me I don't remember very much about the demo, except that it wasn't the way I would have wanted to do things. I never looked at ██ software ████

By the time 1990 rolled around I had accumulated several of the components that would be necessary to put PGP together.

**Briefly, what ■ those components?**

A block cipher, a random number generator, an RSA implementation, a digital signature hash algorithm. I started out using MD4, which was written by Ron Rivest (the R of RSA) who put it in the public domain. In that particular case, since he had explicitly put it in the public domain, I thought there was nothing wrong with using it.

It was in December of 1990 that I began work in earnest. At the time I was doing consulting work for Reuters, and there was a lull ■ the consulting work, so I took time out ■ work on PGP. It took six months, which isn't very long by our standards today, but at the time it was a long time to hold your breath with no income.

I had thought of selling PGP and making money, and was hoping to do that. But about halfway through the project, in the spring of '91, Senate Bill 266 came up. This was a non-binding piece of legislation, a sense-of-Congress resolution, that said that communication systems makers should put a back door in their secure-communications systems to allow the feds to be able to get the plain text.

This seemed to me to be a harbinger of things to come—and it turns out that things actually got worse than that later with the introduction of the Clipper chip. I thought it would soon be illegal to do strong cryptography without a back door, and so at that point, halfway through the development, I abandoned my plans to sell it, and decided to give it away. I thought it was important to get it dispersed as widely as possible, to get it so entrenched that they couldn't take it back from people.

So I continued the development and released it in early June of '91.

**How did you release it?**

Somebody who knew the Internet had volunteered to do the actual legwork to release it, so I gave ■ to him. At the time, I didn't know much about the Internet—I knew how to send and receive electronic mail, but I didn't know anything about newsgroups for example.

In a short time it was all over the Internet.

**Which, functionally, was all over the world. Was that your intention, to disseminate it internationally? Or you just wanted it non-specifically out there ■ much ■ possible?**

Yes, I wanted it nonspecifically out there ■ much as possible.

About five days before the release of PGP 1.0, in June of '91, I ■ ■ ■ smart-card conference

in Washington, and at that conference I learned of the existence of another competing email encryption standard called PEM, Privacy Enhanced Mail. As soon as I learned of this product I assumed that it would destroy PGP, that PGP had no chance of success because of the existence of an email encryption standard that had the force of a standard behind it.

The standard had been in development for several years and had the participation of a lot of companies, and perhaps the government in some way. There was enough powerful interest involved that I thought this would be unstoppable, and PGP was going to be just this marginalized thing.

But I decided to go ahead and proceed anyway—might as well, since I'd sunk all that effort into it—and it turned out that PEM did not prevail over PGP.

One thing I did notice in looking at PEM was that it had some important weaknesses. For example, every message had to be signed, and the signatures appeared on the outside of the digital envelope so that you could always tell who signed it, even without being able to decrypt it. Plus it used 56-bit DES [Digital Encryption Standard] as its block cipher, which is something that the government can easily break.

The first version of PGP used a block cipher of my own design—I had gotten some design elements from someone else. It turns out that later on it wasn't really that strong a design, so I switched to another cipher that was more firmly established ■ the academic world.

**So what happened between ■ and the present with PGP? I remember that you ■ beleaguered on two fronts, ■■■ and the feds.**

That's right. In fact, the way the attacks were coming from both sides, they each precluded solutions that would be effective against the other.

**RSA was taking the position that the published algorithm you had used ■ covered by their patent?**

Yes, that the mathematical formula was covered by a patent. The RSA patent was a domestic

---

## ▲ Few Words From RSA

RSA BELIEVES THAT PGP AND PEM ARE "OLD TECHNOLOGIES" AND THAT THESE MESSAGING METHODS have been surpassed by more flexible and extensible public-key messaging security protocols, namely S/MIME.

Apparently, the vendor community agrees, with S/MIME products already shipping from Nortel Entrust, ConnectSoft, Worldtalk, Frontier, and OpenSoft. Netscape and Microsoft have both announced their intention to standardize on S/MIME, not PGP, and Netscape Communicator 4.0 should ship next month, instantly creating ■ 30 million S/MIME users.

—Kurt R. Stammberger, Director, Technology Marketing
RSA Data Security, Inc.

### From RSA's FAQ at www.rsa.com

"How does S/MIME compare with PGP, PEM, and MOSS?"

S/MIME, PGP, PEM and MOSS ■ specify methods for securing electronic mail. All offer privacy and authentication services. Since PGP, PEM, and MOSS ■ all quite different, they need to be compared with S/MIME individually.

PGP can be thought of as both ■ specification and ■ application. PGP relies ■ users ■ exchange keys and establish trust in each other. This informal "web of trust" works well for small workgroups, but can become unmanageable for large numbers of users. S/MIME, on the other hand, utilizes hierarchies in which the roles of the user and the certifier are formalized. This means that S/MIME ■ both more secure and more scalable than PGP implementations. S/MIME has flexible guidelines for establishing hierarchies of users and will be equally easy for small groups and scalable to large enterprises. S/MIME will also be well integrated into many email applications, making it simple for users and ubiquitous.

PEM ■ specified in IETF RFCs 1421-1424. PEM was ■ early standard for securing email that specified a ■ message format and a hierarchy structure. The PEM message format is based ■ 7-bit text messages, whereas S/MIME is designed to work with MIME email attachments as well as text. The guidelines for hierarchies ■ also ■ are flexible in S/MIME. This should ■ ■ for both easy set-up for ■ workgroups that don't need to ■ part of an all-encompassing hierarchy, and ■ easy path to move workgroups to the hierarchy that best suits their needs.

MOSS is designed to overcome the limitations of PEM by handling MIME messages and being more liberal in the hierarchy requirements. But MOSS has so many implementation options that it is possible for two independent developers to come up with two MOSS mailers that will actually not "talk" to each other. MOSS can be thought of as a framework rather than a specification, and considerable work ■ implementation profiling has yet to be done. The overriding goal of S/MIME is interoperability, with a focus on email.

# ENVISION The Latest Technology

patent, ∎ that would have suppressed it domestically—and the feds were trying to prevent a spread overseas.

So you have domestic suppression and you have overseas suppression.

**Officially, the feds have no authority to prevent its dissemination domestically, but they asserted authority to prevent its dissemination internationally?**

That's right.

**On what grounds?**

The Arms Export Control Act.

**Since it's probably not intuitively obvious to the average computer user that this has anything to do with arms export, please explain! [laughter]**

The State Department has a list of items that cannot be exported without a license. It's called the Munitions List, and ∎ the name implies, it's things like Stinger missiles and submarines and things like that. One of the items on the list is encryption software, so you can't export encryption software without a license from the State Department. It's like trying to export missiles.

This started ∎ criminal investigation.

Actually, the criminal investigation started in early '93. The Customs agents from San Jose contacted me because they wanted to ask me some questions about PGP I was willing to answer their questions because I thought perhaps they needed help—maybe they'd run into PGP in one of their investigations and needed some technical assistance. So I answered their questions over the phone.

They said they would like to come and visit ∎ in Boulder and talk to me directly about it, and that was when I began to suspect that there was more ∎ their interest than getting a tutorial from me about PGP.

So I asked the advice of a criminal defense lawyer, and we decided to go ahead and let them interview me, because we thought that if we educated them a little bit they would see that there was nothing here of interest to them. that I had broken ∎ laws

They came to Boulder in February of '93, and, in my lawyer's office, conducted this interview They said they had just talked with Jim Bidzos of RSA, and based on their conversation with Jim Bidzos they thought that PGP was stolen property. I set them straight on that—I told them that not a single line of code in PGP had been stolen from anyone. that I developed it from scratch. And that in any case if there was a patent issue

involved in this, that should be settled in a civil lawsuit and not a criminal investigation.

The way they came at it was that this stolen property had crossed national borders, and that meant that Customs could investigate—kind of like if you stole ∎ car in San Diego and drove it to Tijuana.

Their early interest in the case was mainly an intellectual property interest. Later they began to divert their interest to focus more on the export control issues—it seemed that the intel

Phil Zimmermann: "In 1991, I thought it would soon be illegal to do strong cryptography without a back door, and so at that point, halfway through the development, I abandoned my plans to sell PGP, and decided to give it away. I thought it was important to get it dispersed as widely as possible, to get it so entrenched that they couldn't take it back from people."

lectual property issue had no merit. Over the next three years, that's mainly what the case revolved around

The case escalated quite a bit in the fall of '93 with the issuance of subpoenas from a federal prosecutor. What had happened was that summer I had made ∎ deal with ViaCrypt to sell PGP

ViaCrypt was going to commercialize the product because they already had ∎n RSA patent license. We announced this at the Crypto conference in late August of '93, and I told Ron Rivest about ∎ at that conference

During that conference I called the Customs agents myself—which is probably something my defense lawyer wouldn't have approved of, for me to have a direct conversation with these criminal investigators—but I told them that they might be happy to know that PGP was being sold commercially with the proper RSA license, and that they shouldn't be too concerned about it now, and they said, "Well, good!"

I said, "Well, how's the case doing by the way?" And they said, "The case has had almost ∎ attention lately, it's been on the back burner, and we've got more important things to do than that case right now."

That was in August of '93. And the information we have is consistent with the idea that they really weren't very interested in the case at the time

But as soon ∎ we announced the deal with ViaCrypt, word got back to Bidzos, and he reportedly hit the ceiling at this. Within a day or two of him hitting the ceiling, the investigation had escalated to ∎ federal grand jury and a federal prosecutor

**On arms export grounds, ∎ ∎ IP grounds?**

On arms export grounds. There were subpoenas being issued, one to ViaCrypt and one to a company that was distributing the freeware

At that time my lawyer contacted the prosecutor and asked if I was the target of the investigation. That's when we were formally notified that I was the target of a criminal investigation by US Customs. Before that time, when they had visited in February, they said that I was not ∎ target of the investigation; in fact they even said there *was* no target, that they were just in their preliminary stages of looking at things.

Within a couple of weeks of that time. I was invited to testify before the House subcommittee for what later became the Cantwell bill [for mer Congresswoman Maria Cantwell proposed ∎ industry-supported bill that would have essentially lifted federal restriction on the export of encryption products]

When I went to Washington to testify. I met with ∎ team of lawyers that had been assembled. We met in the offices of the Electronic Frontier Foundation, and we actually had ∎∎ lawyers in the room, from EFF, CPSR, ACLU, a couple of private attorneys from Washington

and my defense lawyer from Boulder. I gave them a briefing on the case so far, what I'd done, what I hadn't done, and what communications we'd received from the prosecutor. They gave a very pessimistic outlook at that meeting.

**The basic assessment was, "Phil, you're hosed"?**

That's right. That was really, I think, the worst day of the case for me, psychologically. I had a roomful of ten lawyers say to me, in a unified front, that the chances were bad. Fortunately that meeting took place after the testimony I gave that morning, it would have rattled me too much before!

Now it turned out that as things progressed they actually got better. For a couple of months I didn't talk to the press; I was assembling a defense team and got some of the components from that meeting. But my instincts told me I should talk to the press, and so after a couple of months of silence I did talk to the press, and that improved the situation quite a bit.

I think that having all those press articles increased the political difficulty of proceeding with the prosecution.

**In the same vein, there was an aggressive campaign by various organizations to heap awards on you in extremely public ceremonies to counter the heat from the government and make it even more embarrassing for them to pop you.**

Yeah. [laughter] I tended to think of those things as air cover!

Sometimes people ask me if it's a hassle to go through all these interviews, and to ■ it's no hassle at all. I think I owe the press quite a bit. If it weren't for the press, I might be in the slammer. [laughter]

At some point the case had to be handed off from San Jose to Main Justice in DC. We had pretty much assembled ■■■ defense and were waiting for the right time to communicate with Main Justice. We decided that the best time to communicate with Main Justice would be when the prosecution decision would be handed off from San Jose, and we had an agreement with them that they would contact us when that occurred.

That seemed to be dragging on for quite a long time. Through a lot of late '94 we were waiting for that, and it didn't seem to be happening very fast. I think it was in early '95 that something was communicated to Washington and that's when we started activating the Washington components of the defense ■■■ ■■ talking to Main Justice.

Something else that happened in late '94 was

that I was returning from Europe from a speaking tour, and flying into Dulles airport. When I got into Dulles airport, they took me aside to search my luggage, but then a guy came up ■■■ asked me to come with him into an interrogation room. This was a US Customs agent who had a ■■■■■ on me, knew all about the case in great detail.

He was interested in asking me questions about the case without my attorney being present. He took me into this interrogation room, which was this white room without any furniture in it. It kind of looked like a UFO abduction room. [laughter]

And then he started to ask me questions. I was trying ■ resist this, saying "Don't I get ■ have my attorney present?" He said, "No, we don't have to do that because this ■ a port of entry and we're allowed to talk to you any way we want." I said, "Well, do I have to answer your questions?" He said "No, but if you don't, then we can just all wait here until we get this sorted out." He gave me the impression that I was not free to leave until I answered his questions, and I could not contact ■ lawyer.

I kept on arguing with him about this point of asking for a lawyer and not being able to get one, and eventually he gave up. I think I was in there about fifteen or twenty minutes—my sense of time was not very accurate. He finally let me go.

My lawyers responded to this by writing a letter to the Inspector General for Customs, that this was ■■■ improper thing ■■ do, that they knew I was represented by counsel and that this was a violation of my rights. I think the prosecutor didn't know ■ this was happening—I think this was something Customs did on their own.

**Eventually all this got resolved, fairly recently.**

It was in January of ■■ that the case was finally dropped. They faxed a letter ■ my defense counsel in Boulder. They did not give any reasons. In fact, they also faxed a letter to the press at the same time, again, not giving any reasons for it.

Phil DuBois, my lawyer, called me up at home and said, "You wouldn't believe what just came out of my ■■ machine!" He read it ■ ■ and I said "Wow! Let me come over and talk to you about it."

I hung up the phone, and about thirty seconds later ■ rang again ■■ it was John Markoff from the _New York Times_. The phone began to ring and I talked to at least tiny press organizations over the next 48 hours.

And then I had to go ■ on a business trip so they couldn't find me.

That was a good week. [laughs]

The federal mandatory sentencing guideline for violation of the Arms Export Control Act was forty-one months to fifty-one months. Judges have no latitude in sentencing, if they want to keep their job they have to go with the mandatory guidelines. Unlike the state prisons, you don't get any time off for good behavior in the federal prisons, so I'd have to serve at least forty-one months.

**Well, now that you don't have to do that any more, Phil, what's happening instead? [laughter]**

Things have significantly improved!

It's hard to believe—there's people working here that I don't even know!

Okay, I suspect I'm ■■ a lot of people in that I periodically download MacPGP, look ■ the manual, cry "Eek!", and that's the end of it. [laughter] I have a feeling that the reason this company exists is ■ ■ reach people like me, so...how do you go from a globally-distributed free software base to a commercially profitable company? Where do you go from here?

**Linda Hayes:** The fact that Phil did license the product to ViaCrypt, means that there is a commercial product ■■ there, so it isn't just freeware. But ■■ still have a lot of work ■ do.

**Tom Steding:** The basic idea behind the company generalizes what Phil's experience has been, and observes that ■ the information age privacy has been taken away.

There is, for example, the issue of email and its exposure on the Internet. We say that the Internet is made of glass—fiber optics is a big part of the infrastructure, but also it's a transparent medium, you ■■■ ■■ through it. Email ■ fully exposed and gets archived along the way and is potentially subject to digital searches and such.

There's also the cookie problem. People are now beginning ■ understand that when ■■■ surf the ■■■ you leave footprints around. It'd be analogous to walking around the shopping mall leaving your ■■■■■ and address wherever ■■ go.

**PZ:** a cookie is a file that is kept on ■■■ computer by your Web browser, that is downloaded from the Web site where ■■■ just visited. It's an indication ■■■ you have visited that Web site later. If you visit that Web site again, it can tell ■■ you've ■■■ there before, but it also ■■■ that if you visit some other Web site that other ■■■■■ captured where you've been.

I did a radio talk show in San Diego, where the host had just discovered cookies and found a 20MB ■■ that contained his

whole history of Websurfing, that was there without his knowledge.

As we move into the age of the Internet, privacy's boundaries have moved substantially. The purpose of this company is to restore privacy in the information age. We are building a commercial, for-profit activity for broad distribution in the user community. The user community needs ease-of-use; it needs technical support; it needs documentation; ▣ needs interoperability; it needs scalability. All the things that we intend to provide on the commercial side that are absent in the freeware product. We believe it provides considerable value-added and will support a commercial revenue stream.

**Are your potential customers the developers or the end-users?**

Both. There's ▣ consumer side of the business that would extrapolate from the current user base, and move forward in the adoption cycle so that people who are now less likely to put up with a command-line interface still want the product and its functionality.

There's ▣ huge business side of the market-place for small and large companies to establish a privacy infrastructure.

LH: Even today, just through the ViaCrypt product, we are in one-third of the Fortune 100 companies.

**In the corporate world, I know that Lotus Notes is a classic example of RSA-based encryption that's transparent to the user. I also think that they're subject to export restrictions and the export version has shorter keys and is weaker than the domestic version. Are you doing something similar?**

TS: Eventually. There are two obstacles to substantial growth of the business market, for example. One is full seamless interoperability with applications, starting with standard mail packages. If you look at our product roadmap, you'll see us beginning to deliver that interoperability for mail right now.

The other ▣ scalability, the ability to catalog and track large numbers of keys, so the key server aspect of our product roadmap is important for scalable solutions. You'll see that coming out this quarter, at least in a trial version.

LH: If you talk ▣ our customers, those are the two items they really would like to see. It's being driven by customer demand.

TS: We imagine a day in which this kind of encryption is ubiquitously deployed and transparent to the user.

**It seems to me that the fortunes of the company are still highly dependent on regulatory**

**issues. You can't export product, right? You have this problem in common with RSA and all kinds of people, of course. But particularly given the global nature of the Internet, how do you plan to address that? What would you like to see the legal picture be?**

It certainly is tied closely to regulatory stuff. Our technology is not exportable under current law, although ViaCrypt has been able to get export licenses for US multinationals overseas. The company will not ship weak crypto, because a major attribute of the brand is its trusted position, and the fact that it is uncom-

> ## Tom Steding: "There's also the cookie problem. People are now beginning to understand that when you surf the Web you leave footprints around. It'd be analogous to walking around the shopping mall leaving your name and address wherever you go."

promising. We will stick to that strategy.

We believe the US export law is nonsensical, and we'll be pressing, along with our brethren in the high-tech industry, for reconsideration.

**How likely do you think that is to happen?**

Well, Senator Burns of Montana has told us that we can absolutely win this one once the public understands the issue. So if we can get organized in the high-tech industry, and we're taking moves to do that, we can speak with a single voice.

PZ: Senator Burns has introduced legislation to lift the export controls.

**Similar to the Cantwell bill?**

Very much like the Cantwell bill. In fact, last year there were hearings on this in June and July, and I testified at those hearings. It was introduced fairly late in the season so it didn't really get far enough. This year they're going to give it another shot.

TS: Our experience so far ▣ that ▣ the public understands the privacy issue on the Internet, including the cookie issue but not limited to it, there's a growing sense of outrage about their exposure and the fact that the government encumbers the providers of this technology such that they don't have the privacy they would

eventually expect ▣ part of this culture.

Even ▣ the level of spam—when AOL started blocking CyberPromotions the ▬▬▬ hailed them ▣ gods and were really outraged at their lack of options for spam-blocking. Just not being spammed is a privacy ▬▬▬ for people, let alone being snooped on.

LH: Exactly.

In addition to the public outrage, there's a business issue. If ▣ are really prohibited from exporting strong crypto-based products, that doesn't address what can happen outside these shores. Other countries would be happy to sell those customers strong crypto. So from a straight commercial point of view, the government needs to take a hard look, because ▬ will not stay in the lead ▣ a country.

**What is the government's rationale? It's relatively obvious to ▣ that this should happen, but it continues ▣ be ▣ huge struggle. Why!**

We've been told, and there's probably a lot of truth to this, that it really is more from the law enforcement side, fear on that side of the house of terrorists, of pornographers. It's the same stories you hear over and over, that's ▣ least the story they say.

**But how much of that ▣ valid? There was ▣ great attempt ▣ stir up support for imposing draconian wiretap legislation ▬▬ the Net in the wake of "terrorists" bombing TWA Flight 800, and now it's looking like system failure. ▣ lot of this appears to be blatant scare tactics being used cynically and manipulatively ▬ serve some agenda that has nothing to do with the stated one.**

It's scare tactics.

PZ: Historically, when new technologies have been introduced that might have some bearing on constitutional rights, the government has interpreted the Constitution in such a way that it doesn't apply to the new technology. For example, when movies were first invented, when movies started to be widely available in the early part of this century, the government interpreted movies as not being protected by freedom of speech. Movies were not "protected speech," they were "commercial speech," and it took many years of litigation to establish that movies should be protected speech.

Similarly, and more widely known—when telephones first became widely available, the government didn't think the Fourth Amendment applied to telephones, because they don't have to go into your house and search your house, they ▬▬▬ just put alligator clips a few blocks away from your house and listen in on your conversation, so it was not

an invasion of your privacy. It took fifty years of litigation to establish that the government needed something like a search warrant to tap your phone.

So with each introduction of any new technology that has some relevance to our constitutional rights, the government has always interpreted those rights as not applying to that new technology. The Internet is the newest example.

Senator Feinstein suggested that you shouldn't be allowed to distribute information about making explosives on the Internet. Of course, the government, the Department of Agriculture I believe, has pamphlets on how to make explosives out of fertilizer and fuel oil, similar to the kind that blew up the Oklahoma City building. But it's okay for the government to distribute that information in a pamphlet, it's not okay to put exactly that kind of information on the Internet.

**TS:** As Jonathan Seybold says, the government policy also puts the country at a strategic disadvantage in that it forces crypto development overseas, and my strong crypto will be crucial to competing and being successful in the age of the Internet. So this is clearly working against the country's best interest.

The government is also, in this key escrow policy, trying to construct an infrastructure in which it would be very easy for foreign governments to spy on US companies, either here or on their soil, again putting us at a competitive disadvantage.

So I think this whole story is nothing less than the old guard, the Cold War bureaucratic, hierarchical, interventionistic mentality, confronting the era of the Internet and the new guard, the fast-moving global economy and the information infrastructure we're turning into. And this drama, as it plays out, will be part of the transition to the latter mentality.

**I've even heard a lot of multinational US companies say, in essence, "Okay fine, if the government's going to take this attitude we'll move our crypto factories offshore."**

**PZ:** As a matter of fact, some months ago Jim Bidzos announced a partnership with the government of China to develop crypto overseas.

**TS:** The US has this high speed racing boat in the form of high-tech, and this government policy is like a giant boat-anchor holding it back.

**From the standpoint of your Fortune 100 clients, what's wrong with Son of Clipper [the latest federal key escrow proposal], and weak crypto in general?**

**PZ:** Customers don't want it. It's an affront to their basic sensibilities.

**Even button-down corporate companies feel this way?**

Those button-down corporate companies have to sell to their customers too, and their customers don't want it. At the bottom of the food chain, the man on the street doesn't want his private communication listened to by the government. So whatever products he's going to buy, he's going to prefer products that don't behave that way.

**LH:** As a person that really looks at the market and at customer demand, I would say that there is a demand for ease-of-use, there is a demand for integration with email products, there is a demand for the management of keys in large corporations, but I have found no customer demand for key escrow by the federal government. It is not something that customers are asking for, and the alternative, weak crypto, is too frightening, because it can be broken.

Phil's reputation, and the reputation of this company, is based on trust, that when we say it's strong crypto, we've got a guy here that was willing to go to prison. We stand behind that, and people trust us and they trust our product. And for us to not fulfill that promise would be very detrimental, not only to our customers but to us as well.

**From a product standpoint, who are your competitors?**

**TS:** We think we've defined a unique niche in the industry, which is cross-platform, cross-technology, cross-applications crypto services. What we call providing the crypto dialtone for the information age. We do not know of anybody currently trying to play the same role.

Companies like RSA are, to us, suppliers. We use their technology, but there are many others as well. Companies like Entrust, which just spun out from Northern Telecom, are of the Battlestar Galactica of the key-management world for very high-end and government customers, but that's only a small niche. In fact, they appear to us to be a very strong potential partner.

That said, we expect a lot of new entrants into this industry—it's a high-growth market. People are trying to follow the same strategy entering the market today. The advantage you have against those, of course, is time to market—Phil won the time-to market war a long time ago—and moving quickly—and we're moving quickly.

**LH:** At the end of the day, if you want ubiquitous deployment of your product, and we certainly do, then the trust in the brand and the management of that brand becomes a major force.

Phil brings to us tremendous leverage from just his personal brand, and that's something we intend to take with us moving forward. Not just in building the brand for the product, but in the company values. The integrity with which we run this company has a lot to do with what I consider the potential for our success.

**So the war stories have wound down, and now you have to do a company! [laughter]**

**PZ:** Nice segue!

**LH:** A company based on values.

**PZ:** Maybe there'll be more war stories later!

**TS:** We decided at the outset of the company to make what is probably an unusual investment in a startup, in establishing a strong culture. So we defined our vision and mission and purpose—many startups do that. We went beyond that to articulate with a team our statement of values—it begins to institutionalize a lot of what Phil had already established as his approach to this. It talks about privacy. It takes trust as a central theme—in his case, it was trust in Phil and trust in PGP, and we're taking it through the company in terms of the way we do business, with trust with employees, shareholders, and partners. We've added some fairly strong statements about how we're going to do business, in terms of being marketing-driven and moving quickly and being understated.

We went beyond that and did something I've never seen done in a startup—which is establish, in addition to Vision and Values, the third piece, which is Practice. How are an open company, that communicates directly, that makes commitments and sticks to them, that's responsive, that's dignified, and models it in the management team. This means a lot to the company, and we believe it builds a strong foundation for the business.

**LH:** At a pragmatic level, really being sincere about this has allowed us to recruit what I consider the top people in this valley, because people are looking for this kind of environment—they want a fun company, a company that has a great product; obviously a company that's demanding and fast-paced, but where the integrity and the value of the individual is really important.

**PZ:** This is not a Dilbert office.

**TS:** Our objective is to disprove Dilbert, fundamentally.

I'm dumbfounded by the chord this has struck with the team and the immediate payoff this has represented. There's a deep need for

this kind of approach in this industry, and people are really attracted to it.

**Looking at this as if I were one of your investors...**

We're doing a second round if you're interested! *(laughter)*

**...what do you see as the threats to your business? All hopeful young startups have risks—what are yours?**

The investors obviously ask that question, and it keeps me up at night.

I always tell them, it's simply execution. We have a huge market, we have the brand position, we have the technology, we have the products, we have the team, we have the foundation—it's a matter of moving fast and executing well.

**Do you feel that there's a need to educate the users that they need this stuff?**

PZ: I think the feds have already done that.

LH: There is an element of education that is necessary, and it varies from corporation to corporation and from person to person. Of our five marketing initiatives, one is educating, not about PGP per se but about the need for encryption and the lack of privacy.

I for one, before I came here, really didn't think about the Internet was doing to my privacy. Once you become aware, it's a whole other way of looking at the world.

PZ: Normally, educating the market is an extremely expensive undertaking for marketing. But I think that in this case, with crypto, so much of it is done for us by the federal government, with the Clipper chip and key escrow controversies, by all the clamoring about the Internet, Newt Gingrich's cell phone conversation—(laughter) Before that it was Prince Charles.
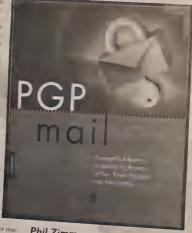
LH: When I first came on board we talked about privacy and the fact that restoring privacy was really our focus, and how much we would have to educate about privacy versus security—and within two months it became a nonissue. I thought no one would want to write about privacy, but when the Clinton administration started talking about the new encryption policy, privacy was front page every day for about two weeks.

**Aside from general paranoia about the feds, what else are people concerned about?**

I think just security of information within a corporation. If you look at our customer base

on the commercial side, the product hasn't been deployed throughout corporations in these top Fortune 100 companies, but in pockets. It's used where you have sensitive information within companies—areas like HR, mission-critical information. The legal profession is certainly an area where cryptography has become a major issue, and medical files.



**Phil Zimmermann:** *"Those button-down corporate companies have to sell to their customers too. At the bottom of the food chain, the man on the street doesn't want his private communication listened to by the government. So whatever products he's going to buy, he's going to prefer products that don't behave that way."*

TS: A recent example—a major credit card manufacturer had a laptop stolen with 300,000 names and credit card numbers. Because it was not encrypted they had to go about the process of informing 300,000 users and changing the

credit card numbers—one of them being Phil.

PZ: They should use PGPDisk! *(laughter)*

**Tell me a little bit about what your products are at this point, and how they relate to the PGP software we know about.**

There will always be a freeware version of PGP, I promise. As long as I'm chairman of this company. Not only that, the freeware version of the product will always be as cryptographically strong as the commercial version.

TS: There's the PGP Mail series which has to do with email interoperability and strong encryption for that application. That's evolving on the product roadmap, and more and more standard mail packages will have seamless integration with PGP.

There's a product area around PGP Disk, which is desktop encryption—lock up your desktop, and it solves the stolen-laptop problem. There's PGP Phone, which turns your laptop into a secure military-grade telephone, for both Internet and standard telephony.

PZ: You talk into the microphone, it compresses your voice and encrypts it and sends it out through the modem, and at the other end the steps are reversed, so you have a two-way real-time conversation that's secure.

**Newt should have had this product!**

*(laughter)* We don't have a cell version at this time, but we hope to

TS: We have products for key directories, key servers for large installations where you have a large number of keys, keeping track of those. We have a Cookie Cutter product that allows you to surf the Web anonymously—that's on the market.

It's a full set on the client side and the server side, and also development kits for third parties.

**Are you doing anything in the area of digital cash?**

PZ: It's something I find interesting, and we'd like to do something in that area, but we've got our hands full right now.

PGP has become a worldwide de facto standard over the last five years. Nearly all the encrypted email in the world today is encrypted with PGP. It's won numerous industry awards. It's done all this without any resources, without any paid staff, me working out of my home in Boulder with volunteer labor while under criminal investigation.

Imagine what would be possible with a company behind it. ∎

# Views

## Industry Insights

Thus, even if an NC costs as much as a PC in an under-supported work environment, it might keep its users happier because it is less likely to have operating system problems, mysterious crashes, and so on. Companies experimenting with NCs are therefore likely to put them in jobs where there is currently no computer, as compared to replacing an under-used PC with an NC. Most people don't like having options taken away from them, even if those options were making their work harder.

There is also some chance that NCs will be easier for novice users to learn to operate. This will be very hard to judge, however, since it is likely that they will be put on the desks of people who have avoided computers until now. These people are probably harder to train and may be reluctant to learn how to use computers; otherwise, they might have tried before now. However, because NCs will be used for more limited tasks than PCs, smart software designers can make the software require less previous computer understanding.

### ■ Different Computer For Different Applications

The biggest problem with today's personal computer market is that, even though you can make a zillion different kinds of computers, almost every hardware and software company is trying to make something like the ones that are already out there. Occasionally, you get some radical thinking, but not often. The NC could be the platform for such radical thinking on the part of the software industry if they stop trying to make it as useful as today's PCs.

Consider the people in large companies who don't have a computer on their desk: What would a computer offer them? You rarely find people

> EVEN WITHOUT PROOF OF LOWER SUPPORT COSTS, MANY COMPANIES WILL BE WILLING TO TRY OUT NCS BECAUSE THEIR SUPPORT COSTS ARE GOING THROUGH THE ROOF, AND IT IS ALMOST IMPOSSIBLE TO HIRE GOOD TECH SUPPORT PEOPLE.

ple without telephones on their desks, at least in the US. The function of the telephone that makes companies want to put them on every desk is that they're communications devices directly connected to the other people in the company.

Software that is used strictly for in-company communication could be the thing that attracts interest for NCs. The two dominant communications media on the Internet, email and the Web, can be tailored for in-company communication with good software design. Although there are already plenty of tools for this, they are clearly not good enough to attract this larger audience; otherwise, companies would be putting PCs on every desk to run them.

What is needed is incredibly simple email and Web interface, something that rivals the telephone (which, even for business models with lots of features, is an order of magnitude cheaper than an NC). However, that's not enough, since corporations are also used to having some control over how company telephones are used. Software that is exceptionally easy and also has a good administration package could help spur NC sales over the next five years. ■

# MICROTIMES INDEX BOLTS TO RECORD HIGH

| DATE | COMPANY | TICKER SYMBOL | CLOSING PRICE 12/31/96 | CLOSING PRICE 01/20/97 | NET CHANGE IN PERIOD | PERCENT CHANGE IN PERIOD | | ANNUAL INDEX RATE | ANNUAL DIVIDEND YIELD | ANNUAL | ANNUAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **SOFTWARE** | | | | | | | | | | |
| OTC | Adobe | ADBE | 39.25 | 38.25 | -1.00 | -2.55 | 19 | +1.29 | +1.52 | 49.13 | 23.75 |
| OTC | Autodesk | ACAD | 26.88 | 30.25 | 3.38 | 12.56 | 28 | 0.24 | 0.79 | 41.25 | 4.75 |
| OTC | Borland | BORL | 6.19 | 6.44 | 0.25 | 4.04 | | 0.00 | 0.00 | 38.75 | 4.44 |
| OTC | Informix | IFMX | 24.00 | 23.75 | -0.63 | 2.60 | 14 | 0.00 | 0.00 | 36.75 | 10.44 |
| OTC | Microsoft | MSFT | 81.13 | 90.75 | 9.63 | 11.88 | 44 | 0.00 | 0.00 | 90.75 | 43.19 |
| OTC | Novell | NOVL | 10.13 | 10.50 | 0.38 | 3.70 | 40 | 0.00 | 0.00 | 16.63 | 8.31 |
| OTC | Oracle | ORCL | 47.25 | 42.63 | -4.63 | -9.79 | 31 | 0.00 | 0.00 | 44.50 | 24.17 |
| OTC | Software Publishing | SPCO | 1.13 | 1.06 | -0.06 | 5.56 | | 0.00 | 0.00 | 2.50 | 0.94 |
| OTC | Symantec | SYMC | 16.00 | 17.13 | 1.13 | 7.03 | | 0.00 | 0.00 | 18.13 | 8.75 |
| | **HARDWARE** | | | | | | | | | | |
| OTC | Apple | AAPL | 23.88 | 16.94 | -6.94 | -29.06 | | 0.00 | 0.00 | 34.38 | 16.00 |
| OTC | AST Research | AST A | 1.50 | 5.06 | -0.44 | 7.03 | | 0.00 | 0.00 | | |
| NYSE | Compaq | CPQ | 79.63 | 73.88 | -3.75 | -4.71 | 23 | +0.00 | +0.00 | 87.61 | 31.88 |
| NYSE | Digital Equipment | DEC | 36.50 | 33.00 | -3.50 | -9.59 | | 0.00 | 0.00 | 76.50 | 28.38 |
| OTC | Dell | DELL | 53.13 | 63.38 | 6.31 | 11.03 | 30 | 0.00 | 0.00 | 67.88 | 23.59 |
| NYSE | Hewlett-Packard | HWP | 50.44 | 53.25 | 2.38 | 4.67 | 21 | 0.48 | 0.90 | 56.75 | 34.88 |
| NYSE | IBM | IBM | 151.63 | 167.00 | 15.38 | 10.14 | 14 | 1.40 | 0.84 | 168.50 | 17.88 |
| OTC | Sun Microsystems | SUNW | 25.66 | 27.63 | 1.00 | 3.76 | 44 | 0.00 | 0.00 | 35.00 | 22.88 |
| NYSE | Tandem | SUNW | 30.28 | 32.25 | 3.00 | 9.59 | 22 | 0.00 | 0.00 | 34.13 | 14.88 |
| NYSE | Xerox | XRX | 51.63 | 57.38 | 5.88 | 11.38 | | 1.16 | 2.02 | 58.38 | 4.88 |
| NYSE | Xerox | XAN | 43.00 | 42.50 | -0.30 | -1.19 | 21 | 1.82 | 1.83 | 49.13 | 3.75 |
| | **CPU's** | | | | | | | | | | |
| OTC | Advanced Micro Devices | AMD | 27.13 | 34.38 | 7.25 | 26.75 | | 0.00 | 0.00 | 35.00 | 10.25 |
| OTC | Intel | INTC | 136.88 | 145.25 | 8.38 | 6.12 | 23 | 0.20 | 0.14 | 149.75 | 49.81 |
| NYSE | LSI Logic | LSI | 33.00 | 35.75 | 1.75 | 7.65 | 25 | 0.00 | 0.00 | 3.63 | 17.38 |
| NYSE | Motorola | MOT | 55.63 | 67.50 | 13.88 | 23.87 | 31 | 0.32 | 0.11 | 68.75 | 44.13 |
| | **COMMUNICATIONS** | | | | | | | | | | |
| NYSE | AT&T | T | 38.63 | 38.28 | -0.25 | -0.90 | 19 | 1.32 | | 46.38 | 31.63 |
| NYSE | CellNetix Corp | NLS | 37.88 | 43.50 | 5.63 | 14.85 | 20 | 0.00 | 1.11 | | 19.25 |
| OTC | MCI | MCIC | 31.75 | 34.88 | 3.13 | 9.84 | 28 | 0.01 | 0.14 | 33.13 | 22.38 |
| OTC | Northern Telecom | NT | 57.75 | 71.88 | | 24.48 | 32 | 0.32 | | | 42.75 |
| NYSE | Pacific Telesis | PAC | 34.88 | 37.63 | 2.93 | | | 1.38 | 3.23 | 39.00 | 2.94 |

**KEY:** NYSE = NEW YORK | ASE = AMERICAN | OTC = OVER THE COUNTER
(H) = NEW HIGH REACHED IN PERIOD (L) = NEW LOW REACHED IN PERIOD

**MARKET DIARY**

---

The latest in a string of national record closes for stocks was reported last month, led by the bellwether Dow Jones Industrial Average, which burst through the 6800 level for the first time on its way to another record high. The 540.16-point rise in "The Dow" amounted to a whopping 8.57% gain for the month. In fact, all the major national indices rewrote the record books last month, the S&P 500 reached to 776.70, the NYSE Composite lifted to 409.31, and the Nasdaq Composite hit 1364.28.

What happened to the MicroTimes portfolio? It followed suit, gaining 388.56 points, or 4.66%, to close at a record high of 8729.83. Of the stocks in the MicroTimes Index, 20 companies saw their stock rise last month, while nine declined in price.

Turning to the headlines that dominated last month's trading:

Shares of semiconductor companies were once again very popular with investors last month. Advanced Micro Devices galloped ahead $7.25 a share, or 26.7%, en route to a close of $34.38, but not before it hit a 52-week high of $35.00. Last month, Morgan Stanley analyst Byron Wein added Advanced Micro Devices to his model portfolio, prompting a rally in the stock price. Separately, AMD posted a fourth-quarter net loss of $21.2 million on sales of $497 million, vs. a profit of $9.3 million on sales of $595 million in the year-ago period. Despite the loss, AMD was the largest percentage-gainer of the lot last month.

Motorola rolled 25.9% higher en route to a close of $67.50 after trading as high as $69.75 a share during the period. Like AMD, Motorola, too, was added to Morgan Stanley's model portfolio last month by analyst Byron Wein.

Northern Telecom was also popular with Wall Street last month, as its share price rose a stout 24.5% to $71.88 after hitting a new high of $72.38 along the way. The company said last month that the Asia-Pacific markets are key to its growth strategy. "Our growth in Asia-Pacific has really come in the last three years," said James Deas, president of Nortel Asia-South Pacific. "The fast growth is expected to continue over the next few years," he said.

# Computer of the Month

## AST's Ascentia J20

## AST Research

has consistently built excellent computers. Recently, the company has redirected its focus to the mass-market mer-chandisers, with many of its models now available in Wal Mart stores. Its newest entry in the notebook market looks to be a winner for that segment of the market. While the Ascentia J20 has much to commend it, its most noteworthy feature is a retail price of $1,799. The unit weighs just under 6 lbs, and is a fairly standard 9" x 11.4" x .5" thick.

While many of the notebook com-puters I review are higher-end systems because this is where the most innov-ative features appear first, there is a growing demand for good notebooks that are more affordable. The Ascentia J20 has both a good price and many of the features most in demand. Truly, this is an amazing notebook computer for the price.

Powered by a Pentium 100MHz chip, it comes with 8MB of RAM, expand-able to 40MB (8MB extra for $170). The Ascentia J20 comes with a removable 540MB hard drive. A slightly more expensive model comes with an 810MB hard drive and for an additional $1,149 you can get a 1.35GB drive.

The display measures a generous 11.3" diag-onally. It is a dual-scan LCD, offering a clear dis-play with a resolution of 800 x 600. If you require an external display, it is easily attached



*the screen to see the full image.*

The keyboard is adequate and includes a couple of the special Microsoft keys that are so helpful in Windows 95. The pointing device is a SmartPoint button that rests in the middle of the keyboard and moves the cursor around. This is not my favorite pointing system—I cannot work with it as fast as I can with a conventional mouse—but it works well enough after you get used to it. When you are on the go, however, a mouse is simply not practical. But, at your primary work site I recommend connecting a mouse through the serial port. I had a hard time finding the pointer on the display much of the time. Finally I changed the mouse settings to show a tail. This let me see the pointer as it was moving across the screen. Making this change is especially helpful on LCD displays.

The Ascentia J20 is rich on power con-servation features and, amazingly, has a lithium ion battery pack. This tech-nology is frequently found only on the more expensive units. Replacement battery packs ($199) are avail-able. When you power down the machine, you can choose to put it in suspend mode, which will bring you

> The Ascentia J20 is rich on power conservation features and, amazingly, has a lithium ion battery pack. This technology is frequently found only on the more expensive units.

through the port on the back. You can get high-er resolutions on both the internal and external monitors, but if you choose a higher resolution on the internal display, you will have to pan

back to where you left off the next time you power up. If you simply close the unit, it will also go into suspend if you set your machine up for this option.

# Solutions

## Laptops *continued*

It also has a built-in 14.4Kbps fax/modem. If you want a faster modem, you can connect it through one of the two PC Card slots.

While it has sophisticated audio features and software, it does not have a CD-ROM drive. This

the drive is that so much software now comes only in this format.

AST bundles a variety of software with the Ascentia J20. You have a choice of installing either Windows for Workgroups or Windows 95.

AST rounds out the package with a three year warranty as well as a host of online, fax and voice response technical support options. If you want a new notebook, but don't want to spend a lot of money, this is certainly a model to consider. ∎

> ## If you want a new notebook, but don't want to spend a lot of money, this is certainly a model to consider.

is not surprising for this price. AST offers a 6x drive ($530) as an accessory. You can purchase external CD-ROM drive for less money if you are on a tight budget and it will work well. I must now confess that increasingly I find a CD-ROM drive a necessity. The reason for having

The one you do not select will be erased from the system. Puma's TranXit software supports the infrared port to facilitate the transfer of files over the IRDA port. And finally, you get other software including the ubiquitous Prodigy, America Online, and CompuServe starter kits.

## Graphic WinMark 96' Comparison

| | |
|---|---|
| 3D | 37.8 |
| Diamond Stealth 3D 16.7M Color | 29.5 |
| Matrox Mellonium 16.7M Color | 21.2 |
| ATI Video Xpression 16.7M Color | 11.8 |

Result from Pentium 166 System

# MULTIMEDIA

## Multimedia Kits

### 8X $139
- 8X CD-ROM Drive
- 3D PnP Stereo Sound Card
- 30+ Bundled CD Titles
- 60 Watts Stereo Speakers

### 12X $159
- 12X CD-ROM Drive
- Sound Blaster 16 PnP Sound Card
- 30+ Bundled CD Titles
- 60 Watts Stereo Speakers

### 16X $279
- 16X CD-ROM Drive
- Sound Blaster 32 PnP Sound Card
- 30+ Bundled CD Titles
- 200 Watts Stereo Speakers

## CREATIVE
### Sound Blaster 32 PnP
- True 16-bit Cd Stereo Sound
- Orchestral Quality WaveEffect
- 3D Sound

$99

## CREATIVE
### Sound Blaster AWE 64 PnP
- The Ultimate Audio Experience
- Orchestral Quality WaveEffects
- Advanced Signal Processing
- 512K RAM On Board

$189

## CREATIVE
### Sound Blaster 16 PnP
- True 16-bit CD Stereo Sound

$69

## Acer
### AW 32 Pro
Wavetable Sound Card
- True 16-bit CD Stereo Sound
- Full Duplex, IDE Interface
- Built-in MIDI Interface

$59

## YAMAHA
"The Way your computer should Sound"

### YST M7M $39
- 5 Watts per Channel
- Active Servo Technology

### YST M15M $79
- 10 Watts per Speakers
- Active Servo Technology

### System 45 $189
- 10 Watts Speakers &
  25 Watt Sub-Woofer
- Active Servo Technology

## 16-Bit Stereo 3D PnP Sound
- True 16-bit CD Stereo Sound
- 100% Sound Blaster Compatible
- IDE Interface, Full Duplex

$29

## Super Woofer Satellite Speakers
- Bose Style Swivel Satellite Speakers
- 120W PMPO, 10W/15W RMS
- Convenient Control Panel

$89

## ALTEC LANSING
### MULTIMEDIA
Subwoofer & Speakers

| | |
|---|---|
| ACS45 6W Speakers, 20W Woofer | $89 |
| ACS500 22W Speakers, 40W Woofer | $299 |

## Multimedia Speakers
- Magnetically Shielded
- High Efficiency
- Full Range Response

| | |
|---|---|
| 60 Watts | $18 |
| 200 Watts | $39 |

# Online Guide

INTERNET • BY JOHN S. QUARTERMAN

# Languages On The Internet

## Determining A Lingua Interneta

# A cursory

reading of USENET ▪ IRC might indicate that
the Matrix has its own language and it's not
quite like any human language. Somewhat
more seriously, the Internet and other networks
have been accused of imposing English as the
universal network language. Is this true? Yes
and no.

## Diversity

Want to converse with somebody in
Portuguese, Spanish, Gaelic, English,
Scots, Dutch, Frisian, French, Catalan,
Italian, Esperanto, Latin, Romans,
Romanian, German, Czech, Russian,
Yoruba, Hebrew, Arabic, Gujerati,
Thai, Tagalog, Chinese, Mandarin,
Cantonese, or other?, Korean,
Japanese, Hawaiian, *http://www.
olelo.hawaii.edu* ▪▪▪▪▪ Native
American (pick your favorite *http://
babel.uoregon.edu/yamada/guide.
html*)? Use the Net. I haven't ▪▪▪ ▪▪▪▪
talk ▪▪ Greechez yet, but I'm sure they'll show
up sooner or later if they're not already out
there ▪▪▪ Thanks to Brian, Beckley John
apple.com ▪▪ the last two URL's above and to
him and others on other mailing lists and
persons discussions.

Lan▪▪▪▪▪ in other ▪▪▪▪ ▪▪▪▪▪ ▪▪▪▪▪▪▪▪▪
▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪▪▪ ▪▪ ▪▪▪▪▪ ▪▪▪▪▪



*Ramaji produces [adjust]looking with Windows Fonts?*
*Please visit the FAQ*

Internet and become visible as well as audible
to the world. For example, The Dakota
Language Homepage *http://www.cord.edu/dept/
language/ctsy* plays audio of both phrases and
phonemes.

Now, read the final ▪▪▪ *The Economist*
▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪.com reported in a
▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪ ▪▪▪▪▪▪ of the Internet.

ever, may be the restoration
of their heritage. Like many
native Indian languages, the
Oneida tongue was dying out,
now the tribe has money to
spend reviving it, with the
creation of a new written
form and the production of a
CD on which elders tell
ancestral tales.

The Oneidas, you see, have be
taking advantage of their sov-
eign status to run casinos, and
thus make money. It's been said that a language
is a dialect with an army and a navy, but eco-
nomic success is the best guarantee of linguis-
tic success, witness Catalan, where Catalan
has no army, navy, nor national independence,
yet Barcelona successfully hosted an Olympics
and everybody now knows where it is and what
language it speaks. Catalan is better known
than, for example, Galician, which is also a
Romance language spoken on the same part of
Spain, where Galicia isn't as widely ▪▪▪▪▪▪.
But the Internet lowers the cost of distr▪▪▪▪▪▪▪
materials about one's language, not only for
native ones at least descendants of another lan-
er's, but also to everyone else.

## Archaicism

There are old ▪▪▪▪▪▪▪ in tales of ▪▪▪▪▪▪▪▪▪
thousands of words and old Latin ▪▪▪▪▪▪▪▪
▪▪▪▪▪▪▪▪ the printed ▪▪▪▪ ling ▪▪▪▪▪▪

## Internet *continued...*

are on the Net. Did you want to know why musty old English manuscripts often have "ye" where we would write "the"? I knew you did. It's because often the "y" isn't really a "y"; it's an approximation of the Old English letter called a "thorn" which is properly written like a "b" and a "p" superimposed. And the thorn is pronounced like what we would spell, you guessed it, "th."

For that matter, "And certaynly our language now used varyeth ferre from that whiche was used and spoken whan I was borne ..." as William Caxton wrote ■ 1490. If I never hear the word "puter" again, it will be too soon. Although I do find it amusing when someone uses "pc" as a synonym for "computer" of any kind. Few people seem to remember that ■ was originally "PC," capitalized as an acronym for "personal computer." Where is the "c" in "puter," I wonder? The horror of it is that in twenty years, "puter" will probably be as common as "phone" for "telephone."

Reminds me of the time my motorcycle broke down on the road to Accra, shortly after I had crossed from French-speaking Togo into English-speaking Ghana. I asked one of the fellows on the truck that picked me up some question in English about Accra, and he said, "Don't you speak English?" Maybe I was still practicing French-style elision, much like dropping the "com" from "puter."

For that matter, "email" is not nearly as good

as the original: "netmail." How do I know that was the original? Well, I've been using the stuff since 1977, and I was just discussing it with Michael Padlipsky, who is one of the people who invented it, ■ distinct from mail on a single computer, which is of course just "mail." Computers and networks have produced ■ rich set of jargon (*http://www.datamation.com/PlugIn/humor/jargon/*).

As William Caxton said, "Certaynly, it ■ harde to playse every man by cause of dyversite & chaunge of langage."

were close to gone, and came back, such as Czech and several Native American languages, some of which had no living speakers at all before they were revived. Will the Internet provide the incentive to bring back others, such as Cornish? Or to formalize relatively informal ones, such as Yiddish? We shall see. It certainly has the power to permit geographically separated practitioners to discuss with one another such things. Perhaps a language will soon be a dialect with a Net connection.

> It's been said that a language is ■ dialect with an army and a navy, but economic success IS the best guarantee of linguistic success...
> But the Internet lowers the cost of distributing materials about one's language not only to its native (or at least descendants of native) speakers, but also to EVERYONE else.

### Dead Languages?

Some languages never completely die, such as Latin. Maybe nobody (except perhaps ■ few monks and nuns) speaks it ■ daily conversation, but so many historical documents are written in it that there are still plenty of people who know it. The pope even writes in ■

Other languages were pretty well gone, but were revived, most notably Hebrew. Yet others

### The ■■■ ■■■■

Lots of people assume that the Internet is all English in daily communications and on Web pages, and that the culture of the Internet is basically American. So the Internet would be a form of American cultural imperialism.

It's not so. Some countries, such as Japan, perform practically all Internet actions in their local language. It's true ■■■ people in Japan

### Internet *continued...*

have to use English to communicate with people in the States and elsewhere, but that's actually an advantage, since most people ▦ more fluent in writing and reading a foreign language than in speaking it. The Internet in addition decouples information interchanges so that the person using ▦ foreign language doesn't have to respond immediately, instead having time to think.

In The Place of French in the Internet part one (http://www.mids.org/mn/606/french1.html) and part two (http://www.mids.org/mn/607/french2.html), Daniel Pimienta (d.pimienta@funredes.org) explored languages on the Internet by ▦ simple but effective technique. He looked for keywords in Web pages, picking words that had cognates in English, French, and Spanish. His results were rather interesting. Yes, English is by far the most prevalent language on the Internet. Considering that about 60% of everything on the Internet is in the United States, and

the next two countries by total hosts (http://www.mids.org/mmq/304/) are the United Kingdom and Canada, with Australia not far behind, any other result would be hard to understand. Nonetheless, French words counted about 5% of English ones, which would indicate around 4% of World Wide Web resources are in French. That is more than double France's percentage of Internet hosts. Not only

that, but French comes in higher in certain cultural areas than others. And individual French cultural figures score high in traditional French cultural areas, everybody has heard of Napoleon, for example, even though Mickey Mouse ▦ more famous. ▦

> Yes, English is by far the most prevalent language on the Internet. Considering that about 60% of everything on the Internet is in the United States, and the next two countries by total hosts are the United Kingdom and Canada, with Australia not far behind, any other result would be hard to understand.

**ONLINE SERVICES** • BY BILL GRAM-REEFER

# All The News In '97

## Up-To-The-Minute Info On Your Screen

# The good

news for computer users with Internet connections is that there'll be a growing number and variety of online news sources from which to choose. These online services offer different business models to consumers—from advertising-supported broadcast of news to specialized, roll-your-own reports. Some services can be sent directly to your email address, while others you must go get yourself; there's even a news service that pumps the news to your computer automatically serving as newsfeed-as-screensaver.

## PointCast
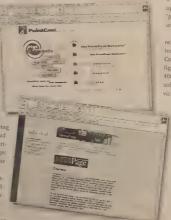
The PointCast Network delivers current news and information free to anyone with Internet access. The company's SmartScreen Technology kicks in anytime your computer is idle, transforming flying toasters into a news ticker. You can view headlines, stock quotes, weather reports and sporting results as they cross your screen. To get the full story all you need do is click on the headline.

Already available for Windows-based PCs, PointCast offers a Macintosh beta, with full shipping version due soon. The Mac beta includes drop-down menus, drag-and-drop text and graphic support for Open Transport and Internet Config and cool screen fades that leverage the graphical power of the MacOS. So far, the Mac version offers six channels: News, Companies, Industries, Weather, Sports and Lifestyle. Sources include AccuWeather, Business Wire, EDGAR Online, PR Newswire, Reuters, SportsTicker, and Standard

& Poor's Comstock stock ticker

On the Wintel platform PointCast has received major support from big players. Microsoft, for instance, has announced it will include the PointCast Network on the Microsoft Internet Explorer Active Desktop.



MSNBC, the online joint venture between Microsoft and NBC, has also agreed to be a news and information provider. Additional news sources available to Active Desktop users include *Time*, *People* and *Money* magazines, *Los Angeles Times*, CNN, Reuters, *San Jose*

*Mercury News*, and *The New York Times* Also, as part of the agreement between PointCast and Microsoft, PointCast will distribute Microsoft's Internet Explorer Web client as its preferred Internet browser, upon the release of its PointCast Network 97 due in the second quarter. PointCast will also support ActiveX technology and formats that support the ability to "push" content to users without their having to search the Net.

Meanwhile, Compaq has expanded its initial relationship with PointCast to deliver a customized version of the PointCast Network. The Compaq Channel, now shipping with most configurations of the Compaq Deskpro 2000 and 4000, provides distribution of articles, news of software and driver updates, new products, service and support topics, press releases, industry news, and other information important to Compaq— and, perhaps, its users.

Software for the PointCast Network is free. Advertising also marches across your screen in addition to "da news." Both Windows and Macintosh versions of the PointCast client software can be downloaded from *http://www.pointcast.com*. Note that the first Mac version requires a PowerPC and the use of Open Transport, while a 68k version is still in development. PointCast provides registered users with complimentary tech support on a one-business-day turnaround. A wide range of automated services, including constantly updated status reports for the PointCast Network, are available by calling 1-800-586-4733.

## NewsPage

Individual Inc.'s NewsPage is a subscription-based news service coupled with some advanced

## Online
### Guide

**Online Services** continued

tising You can get a personal NewsPage every business day, with up
to twenty stories from 2,500 topic categories.

The service costs around $6/month to start. The first thing you do is
set up your user profile, which lets you pick from the various cate
gories of news, from company names to industry sectors like
Communications Servers and Asynchronous Connectivity Overview,
or Digital Photography and Cameras. Once you've set up your profile
Individual sends an email to your address, listing twenty story head
lines chosen from those categories. You use your Web browser to log
on and select which stories you want to read. While you're there, you
can also do specific topic or name searches or change your profile at
any time.

> Individual Inc.'s NewsPage is a
> subscription-based news service
> coupled with some advertising.
> You can get a personal NewsPage
> every business day, with up to twenty
> stories from 2,500 topic categories.

Upgrades to NewsPage enable you to receive the full text of all
twenty stories without having to log on each day to get the ones you
actually want to read thoroughly. The Web site lets you browse the
entire day's content or search for older stories. There are also links to
the hot spots, the Top 10 requested NewsPage categories. An interest
ing snapshot of what NewsPage users think is important. Interactive
Media Business Overview, Front Page Business News, Automotive
Industry Overview, Internet Overview, Front Page Healthcare News,
Worldwide Web Overview, New Web Services & Pages, Major
Pharmaceutical Companies, Top 25 Semiconductor Companies,
Motion Picture Industries. Hmmm. You can also click on stock quotes
for an update from major stocks and exchanges. And there is an online
assistance area.

Individual Inc's Personal NewsPage is featured by Netcom, a nation
al Internet Service Provider (ISP), at no cost. But the sources are limit
ed. A $4/month upgrade gets you free access to most of the premium
sources. While many ISPs have jumped on the $20/month flat rate
unlimited Internet access bandwagon, others who still charge higher
hourly rates, like Netcom, offer services like NewsPage to their brand
ed service to differentiate themselves and to add value in what has
quickly become a commodity market.

News and information sources for NewsPage include  Dotson
Limited to  AP Business Wire, CMP Publications, Cahners, Comtex
Newswire, Clarinet, Cram, Knight Ridder, Kyodo News Inter
News-bytes, PR Newswire, Phillips Reuters, and Ziff Davis. NewsPage
advertisements are simple message banners at the top frame of the
browser. I have never found them intrusive, but actually  comp
couple really stick on me. You can contact Individual Inc. at or
company's Web site at http://www.individual.com

# Guide

## Online Services *continued*

### Daily News

Some Internet search providers are also getting into the news service business, ■ well. InfoSeek has recently announced its first news service, called Daily News. Positioned to attract corporate Internet users, the Daily News will allow Web users to search for articles from six news publishers: *The New York Times*, *The Los Angeles Times*, the *Washington Post*, the *Chicago Tribune*, the *San Jose Mercury News*, and MSNBC. At first, InfoSeek will allow searches for same-day stories only, but has plans to allow fuller time-dated queries.

InfoSeek has also said it will expand its list of news and information sources to over 1,000, with a one-month archive. An automated clipping service will also be rolled out that will enable users to receive all articles on a certain topic.

In the heat of Internet search-engine competition, InfoSeek claims its news service will be different because it will offer more "high-profile" sources. This, in its bid to distinguish itself from other popular search engines like Yahoo, which InfoSeek claims is mainly targeted towards consumers. InfoSeek wants to focus on its estimated 70% of existing users who are corporate customers.

### Newsbytes

As many online news services, including some of those mentioned here, publish Newsbytes, you may want to get closer to the source. Founded in 1983 by Wendy Woods, Newsbytes provides comprehensive coverage of computer-industry topics with firsthand reports from writers all over the world.



You can subscribe to the Newsbytes US Web site for as little as $50 for ■ prepaid 12-month subscription. The Web site lets you read the full text of any or all ■ 30-50 articles daily. You can also view and download product photographs, do a key word search or download all of the day's stories.

Newsbytes also offers a NetWatch Mail list for the Internet and online industry. The NetWatch Mail List delivers an email to you containing all of the latest developments in Internet software—including clients, servers, security software, and Web authoring tools. Announcements of new Web sites and business news and acquisitions are also included. The NetWatch Mail List subscription fee ■ $35 for 12 months prepaid. Contact Newsbytes ■ http://www.newsbytes.com. The Web site offers a free daily update for your inspection.

BY MICHELLE V. RAFTER

# Stop Spam!

## Fighting Back Against Electronic Junk Mail

# You get it.

You despise it. So quit complaining and do something about it. It? Spam. Junk email. Unsolicited bulk mailings. Postage due marketing.

Whatever you call it, the unwanted crud is creeping into in-boxes everywhere like so much electronic kudzu, the scourge of the PC class.

Unless you're Rip Van Cyber-Winkle, you know spam is commercial messages, mass-mailed to scores (if not hundreds or thousands) of unsuspecting email users simultaneously to advertise the senders' newest gizmos or get-rich-quick schemes. Spammers buy email addresses in bulk from companies that use software robots to collect them from Usenet posts, Web directories and Internet access providers' member databases. Why do people hate it? Apart from being incredibly annoying and violating every known rule of Net behavior, spam costs time and money to get and get rid of, for both Internet access companies and consumers. In fact, spam has become Internet users' Big Gripe, leading companies such as America Online and CompuServe to sue super-spammer Cyber Promotions Inc. to stop hundreds of thousands of junk messages from flooding their mail portals every day. Exasperated consumers are signing online petitions and screaming for anti-spam regulations. Crusaders have taken to building Web sites exposing stupid spam tricks.

The problem is, it's not so easy to get rid of the problem. There's no spam repellant that works everywhere, every time. There's no American Junk Email Association to call and remove yourself from The List. There's no anti-spam law, and it's not clear whether existing leg-

islation banning junk faxes and certain telephone solicitations is broad enough to cover junk electronic mail.

But that doesn't mean you have to take it.

You might not be able to kill off the spammers—wouldn't that be nice?—but you can prevent most of their sales pitches from clogging up your email box. How? Remove yourself from email lists, use mail filters, excise personal information from Web directories and complain to anyone and everyone connected to the problem.

Read on, and be spam-free.

## 1. Return to Sender

The simplest way to stop getting spam is to remove yourself from the spammer's mailing list, though it's a little more complicated than hitting the "Reply" key and saying "Get lost." When you get spam, look for instructions within the solicitation that explain how to get off the list, usually a separate email address to write.

If you log onto the Net from America Online, CompuServe, Prodigy or another online service, make sure to include your entire Internet address in your request (i.e. "name@aol.com" or "name@prodigy.com"), not just the I.D. you use on the service.

In the unlikely event a spammer includes an address, phone or fax number in the message, follow up your online request with a snail-mailed letter, call or fax.

> Whatever **you** call it, the unwanted *crud* is creeping into in-boxes everywhere like so much electronic kudzu, the *scourge* of the **PC** class.

Unfortunately, many spammers don't include instructions for de-listing yourself, and just as many fake their return addresses to play hard to get. If that's the case, you'll need to do a little more work.

## 2. Cry Baby

You've asked to be removed from a spammer's mailing list but the garbage is still piling up. Now's the time to complain.

Start by writing the spammer's Internet service provider. Because spammers hide behind fake email addresses, that's easier said than done. You can ferret out a spammer's real address, or at least the domain they're sending mail from, by tracing information in the spam's Header field, the lines of code that trace the machines through which a piece of email has traveled. See Internet consultant John C. Rivard's Stop Junk Email site (http://www.mcs.com/~jcr/junkemail.html) for an excellent step-by-step guide to tracing spam to a legitimate address on a legitimate server. The alt.spam FAQ (http://digital.net/~gandalf/spam-faq.html), "Figuring Out Fake Email & Posts," also provides a complicated but thorough explanation of how to spot a fake return email address and trace it back to its roots.

If you know the domain the spammer is using to send mail, you can use InterNIC's whois service (http://rs.internic.net/cgi-bin/whois) to find a name, address and phone number for a person responsible for that machine and

## Stop Spam! *continued*

who their ISP is. If you can't get a name, most domains registered with InterNIC have an "abuse@(domainname).com" account you can send complaints to. Some non-standard abuse addresses are: support@portal.com , 70006.001@compuserve.com , GNNadvisor@gnn.com , spamcomplaint@mci.net , and srb@spry.net .

America Online subscribers can forward junk email to TOSemail1 or TOSemail2, and read more about what to do at Go Spam Update.

It wouldn't hurt to alert your own Internet service provider to incoming spam, especially if the spammer is sending out mass mailings with a forged I.D. that makes it look like the mail came from them.

### 3. Don't Be a Bozo, Use One

To weed out unwanted mail before you see it, use a "bozo filter." Most email programs have built-in filters for routing mail to different in-boxes, sorting messages based on their importance and blocking mail from stalkers, harassers

and other weirdos. The same filters can be set up to spot mail from a known spammer and automatically transfer it to your email program's electronic round file.

For example Qualcomm's Eudora Pro 3.0 software could be programmed to spot incoming messages from "anyone@evilspammer.com" in the "From:" or "Reply-To:" lines of the Header field and automatically transfer them to the program's Trash mailbox. Unfortunately, free versions of Eudora Lite widely disseminated by Internet access providers don't have filter options.

Internet users who log on from UNIX machines can set up filters via procmail and mailagent, or BBDB (http://www.netscape.com/people/jwz/bbdb/), all popular UNIX email readers. Find more details in a comprehensive filtering mail FAQ (http://www.cs.ruu.nl/wais/html/na-dir/mail/filtering-faq.html) for UNIX users.

If you log on at work, server-based email programs such as Lotus Notes, Microsoft Exchange

and Novell GroupWise can be configured to block addresses. If you're getting spam on the job, let your company's Internet administrator know you've got a problem and ask what they can do about it.

In mid-October America Online installed its own junk email blocker, a service called Preferred Mail that filters ads from more than fifty known spammers. AOL subscribers who want to receive commercial mailings (yes some people do) can turn off the block at Go Mail Controls. AOL is curbing its own junk mailings, allowing customers to permanently block the pop-up ads that appear when they log on by altering their member profile at Go Marketing Preferences. CompuServe is considering adding spam blockers as well.

Filters have one major downfall: You can't block addresses you don't know about, and spammers change addresses more often than Dennis Rodman changes hair color. To really get rid of spammers, you've got to outwit them.

---

# put your business online

starting at
$48.90
a month

Stop Spam! *continued*

### 4. Keep Your Address To Yourself

Spammers compile email lists from addresses they collect online, and the pickings are best on Usenet newsgroups, where people post tens of thousands of messages ▪ day. Spammers use robot software called header scanners to cull email addresses out of "From:" lines in posts' Header field, collecting thousands at ▪ time.

Some newsgroupies elude scanners by deleting their email address from their posts. But that prevents *anybody* from reaching them via private email. Craftier newsgroup regulars get around the problem by using a fake address in the "From:" line—or leaving it blank—and including a bona fide address in a signature at the end of their post

"Since I made this change, my junk mail has reduced somewhat," one happy Internet user says, "and I expect it to drop drastically in a few more weeks as older information begins to wash off newsfeeds. It's not very cost-effective to extract email information from a grepped newsfeed when it's formatted like I have it."

### 5. Make Yourself Invisible On Mailing Lists

Automated mailing lists are another source of addresses for spammers, because anyone can issue a simple command via email to

### ARM YOURSELF

THE MORE YOU UNDERSTAND HOW SPAMMERS WORK, THE BETTER you'll be at avoiding them and protecting your personal information online. Here ▪ some additional Internet resources to start you down the path to anti-spam self-enlightenment.

• **news.admin.net-abuse.email**—The Usenet newsgroup devoted to discussion of spams and ways of eliminating spammers' accounts.

• **The Netizen's Guide to Spam, Abuse, and Internet Advertising** (http://com.primenet.com/spamking/)—A much-referenced guide to electronic junk that includes definitions acceptable mass-mail practices, links to other anti-spam pages, and a blow-by-blow account of the Webmaster's personal vendetta against one relentless spammer.

• **Netizens Against Gratuitous Spamming (NAGS)** (http://axxis com/~ian/nags/index.html)—Explains the "I'm Nice," "I'm Annoyed," and "I'm Really Pissed Off" methods of dealing with spam and imparts various spam-detection techniques.

• **Text of Section 227 Title 47 of U.S Code** (http://www.ca-probate.com/faxlaw.htm)—The so-called "junk fax" law that some spam haters interpret to cover spam.

• **Stop Junk Email** (http://www.mcs.com/~jcr/junkemail.html)—Run by JC R Design and Consulting, this comprehensive anti-spam site includes news, answers to frequently asked questions and a primer on dealing with junk email

• **Junkbusters** (http://www.junkbusters.com)—Offers a free "Junkbusters Spamoff" notification to post on your Web site telling spammers to get lost, and provides other spam-stopping tips

• **Get that spammer!** (http://kryten.eng.monash.edu.au/gspam.html)—Instructions for sniffing out a spammer's real address, example complaints, links to other junk email sites and model privacy policies for Internet service providers.

—*Michelle V. Rafter*

# Online Guide

## Stop Spam! *continued*

display every address on the list. It's just ▩ easy, however, to make ▩▩ your address never shows up in a request.

Start by discerning what software the mailing list runs on, three popular programs are Listserv, Listprocessor and Majordomo. A good way to find out is by looking ▩ the instructions you received for subscribing and unsubscribing, (e.g. "listserv@mailinglist.com" or "majordomo@mailinglist.com").

Next, send the following commands to the list keeper, the address ▩▩ write to get on or off the list, not the address you post messages to.

For Listserv mailing lists: Test if you can display mailing-list addresses by sending the message "REVIEW" to the list keeper with ▩▩ word "REVIEW" in the body of the message. If it works and you ▩▩▩ to prevent your name from appearing, send the listkeeper a message with "SET (listname) CONCEAL" as the text, with the name of the list in the place of "listname." To reverse the request, send ▩ message with "SET (listname) NOCONCEAL" in the text.

For Listprocessor mailing lists: To display addresses on a list, send the listkeeper the message "REView (listname)" To conceal your name, send the message "SET (listname) CONcealYES." To reverse the request, send the message "SET (listname) CONceal NO."

Majordomo lists are either "private" ▩ "public." Anyone ▩▩▩ use ▩ "who (listname)" command to see all the addresses on a public list, but the command doesn't work on private lists. If you're concerned about privacy, ask the listkeeper if the list you subscribe to ▩ public or private. If it's public, find out if they'll change it.

There are other ways to shield your identity from spammers, but they involve extra work, and money.

## 6. Use Remailers And Aliases

Remailers originally set out to offer people a lifetime email ▩▩dress, so no matter how many times they switched Internet service providers, hounds and associates could track them down. But some savvy email-▩▩▩ suggest using remailers ▩▩ spam deterrents.

Remailers work by issuing an email address that automatically forwards mail to the subscriber's current email box or boxes. Pobox *http://www.pobox.com/*, for example, charges $15 a year for its remailer service, which includes three aliases. "Give the first alias to ▩▩▩ friends and family. Give the second to business associates, and ▩▩▩ the third to post to newsgroups," Internet expert Fred Hapgood suggests. Then, set up the filters on your email program so mail from Aliases No. 1 and 2 dumps into your inbox, and mail from Alias No. 3 goes directly into your electronic waste basket, or into ▩ low-priority "Usenet" or "Spam" mailbox you can flip through when ▩▩▩▩ got time to kill.

Another way to cloak your identity ▩ through anonymous remail-▩▩▩ which allow people to post messages and send email without ▩▩▩ding any personal information. Find out more about anonymous ▩▩mailers at Raph Levien's exhaustive remailer list *http://www.cs.berkeley.edu/~raph/remailer-list.html*, at remailers CyberPass (*http://www.cyberpass.net/*) or Seattle WebWorks *http://www.seattle-webworks.com/pgp/*).

Even if you don't sign up with a remailer, you can use aliases as spam deflectors If your ISP or commercial online network offers ▩▩▩. People who sign up with America Online or Prodigy for

BY JON LEBKOWSKY

# "Parental Control" Software

## Who's Really In Control?

# CyberSitter

has already driven me nuts tonight.

I loaded the ten-day review copy of the software, then found my mailbox blocked because it's at an "offensive" site, well.com. I had to disable the blocking function and restart Windows to send and read email! Imagine my surprise.

My reasons for evaluating CyberSitter have nothing to do with wanting to block sites from my 4-year-old grandson, who lives with us, and who's into Tonka and Sonic the Hedgehog on CD-ROM, and so far totally uninterested in the World Wide Web. In fact, I wouldn't block his access if he were a teen, all surging testosterone fizz and high curiosity about worldly matters. I wouldn't block, because blocking is not good parenting. It's convenient, for sure; it would save me the task of facilitating his understanding.

Authoritarianism is like that, and believe me, CyberSitter is about authoritarianism. In addition to blocking the "bad" sites, CyberSitter tracks "violations" and records them for parental followup.

## To Block Or Not To Block

My real reason for checking this software out is the latest Net controversy. To tell you how I got here I should roll back the clock several months, to the point where reporter/activist Declan McCullagh and I engaged in a heated debate about blocking software.

I can see in retrospect that we were having two quite different conversations. Declan argued the negatives of blocking software, especially the consumer's ignorance of the content of the blocking software's database, which is encrypted and "hidden," ostensibly because it's

a competitive trade secret. If I have access to your database and know who you're blocking, I can build a competing product that will block the same sites and then some.

Since the database is hidden from view, the parent has no way of knowing if, for instance, it follows a political agenda, e.g. blocking all "left-

> **BLOCKING SOFTWARE IS A CONCEPTUAL REPLACEMENT OF GOVERNMENT CONTROL WITH PARENTAL CONTROL, AND THAT'S WHAT WE ALL WANT. BUT IT'S AN ABDICATION OF PARENTAL CONTROL TO A THIRD PARTY, THE SOFTWARE MANUFACTURER WHO MAKES DECISIONS ABOUT WHAT'S OKAY AND NOT OKAY FOR KIDS TO SEE AND READ.**

ist" sites but not sites that follow a right-wing agenda (pro-gun, anti-abortion, etc.)

I was arguing the parent's right to block, not because I thought blocking was a Good Thing, but because an argument that a child's information rights supersede parental authority

seemed impractical and wrong-headed, given that we haven't clearly won information rights for adults at this point.

Though I'm still convinced that a parent has the right to block, if that's what (s)he wants to do, the CyberSitter experience has brought clarity to my slightly overtaxed mind regarding Declan's arguments, and I have to agree that blocking software has some real problems, especially given the example of CyberSitter.

SolidOak, which sells CyberSitter, says its software blocks "any site that contains content that parents might find objectionable for their pre-teen children." But it's not necessarily preteens that are blocked. As CEO Brian Milburn told me: "CyberSitter is intended for use by parents. Our criteria are based on pre-teen users; however, it is entirely up to the parent how it is used and whom it is used with." It's possible, then, that a teenager of 17 or 18 years might face pre-teen access restrictions.

## Investigative Surfing

There are several other blocking software packages (such as SurfWatch, CyberPatrol, NetNanny) with blocking policies more or less extreme, but none of these packages disclose what's blocked. However, you can use trial and error to compile lists of blocked sites, just surf and see what's not allowed, making a list as you go along.

According to 18-year-old Bennett Haselton, that's just what he did, but the publication of the list on his Web site at www.peacefire.org riled CEO Milburn, who was already concerned over the publication last July, in Brock Meeks' CyberWire Dispatch, of a list of words blocked by CyberSitter (http://www.eff.org/pub/Publications/Declan_McCullagh/cwd.ss...

## "Parental Control" Software continued.

kingdom.0796 article). When Haselton's list appeared, Milburn accused him of "reverse engineering" Cybersitter and ghostwriting the CyberWire Dispatch article.

Just what data from CyberSitter was "revealed?" The piece in CyberWire Dispatch includes seven lines containing terms that CyberSitter blocks, and Haselton's site includes a relatively short list of sites that are blocked. When asked whether he still holds the opinion that his software was "reverse engineered," which customarily connotes analysis and reconstruction of the actual code, Milburn replied, "There is no opinion about it. It is a fact."

I did the same thing Haselton says he did: downloaded CyberSitter and surfed selected sites. I chose forty-three sites, some from my own list of bookmarks, others off the top of my head (like playboy.com, which was blocked, and nra.org, which wasn't). I was surprised to find only eight sites blocked: naughty.com, playboy.com, io.com, c2.org, now.org, desires.com, well.com, and sex.com. Some of those are obviously focused sexual content and adult themes, but sites like io.com and well.com are service providers; their offense is that they don't restrict content of their users' Web pages.

The problem is that one or two users with offensive material result in blockage of the whole site. CyberSitter blocks the primary domain, not just the particular page. I was also surprised that the literary Web page Urban Desires (desires.com) was blocked, but not similar publications at word.com and salon1999.com. Evidently that word "desires" triggered the blockage.

Which brings us to the fact that CyberSitter blocks words, too, so your rooster better be a rooster and not a cock, you better be uptight and not anal, and God forbid that you should be tasteless. Incidentally, CUSeeMe was blocked, too, and I can only imagine that the CyberSitter surfers saw this as "I'll show you mine if you'll show me yours." Other interesting blocks: hotlist, terror and heime. I don't even remember hitting these words while I was surfing, but they were evidently buried in documents I was downloading.

I expected more site blocks, and I expected to see a right-wing agenda, since the NOW site was blocked, evidently for its coverage of gay and reproductive issues. I find myself wondering why www.well.com would be blocked but not www.hotwired.com (which is often frank about sex and drugs), or www.hyperreal.com (a rave site with positive info about psychedelics).

### What to Do?

But I digress. Though the CyberSitter/Haselton thrash has been fun to watch, it's a distraction from the serious issues at play here.

Let me tell you how this strikes me: subjectively, I can't argue the blocking companies' right to create and distribute their wares, or a parent's right to use the software as it was intended. But I don't like the concept of blocking, and I especially don't like the lack of disclosure of the blocking database. So what do I do

## "Parental Control" Software *continued...*

The answer is this: We need vociferous, high-visibility debate, not just about blocking software, but about a child's information rights, particularly a teenager's rights, and about the whole issue of content control on the Internet.

Many of us thought, when the Communications Decency Act (CDA) was passed into law, that blocking software was the better response to the issue of "objectionable" material online. The CDA has since been overturned by a lower court, and this decision, appealed by CDA proponents, will soon get a hearing in the Supreme Court.

Blocking software will get a continued push by some as the logical solution, since it's a conceptual replacement of government control with parental control, and that's what we all want.

But as writer Jon Katz has noted, this is trading the rights of children for the rights of adults. Not only that, it's an abdication of parental control to a third party, the software manufacturer

who makes decisions about what's okay and not okay for kids to see and read.

Another unhappy byproduct of the dependence on blocking software is the power the pro-

> THOUGH I'M STILL CONVINCED THAT A PARENT HAS THE RIGHT TO BLOCK, I HAVE TO AGREE THAT BLOCKING SOFTWARE HAS SOME REAL PROBLEMS, ESPECIALLY GIVEN THE EXAMPLE OF CYBERSITTER.

ducers of these packages will gain, and the potential for abuse of that power. CyberSitter responded to the critical pages at *www.peace-*

*fire.org* not only by blocking peacefire, but also by threatening to block the pages of Media3, peacefire's provider, if those pages were not pulled

SolidOak claims over 900,000 paid licensees of CyberSitter, and the list is growing. Addition of a site to CyberSitter's database amounts to an involuntary boycott by all the licensees, most of whom don't have a clue which sites are blocked.

Remember my problem, back there in the first paragraph? I was blocked, and I had to restart my computer to regain access. How many folks, once they set the filters, will resist when they hit a block? Some will trash CyberSitter, but others will accept a self-imposed censorship, a Disneyfication of their Internet experience.

So an attempt to control the content available to children will default to control of all content for some. If that's what they want, fine, as long as they understand just what they're getting. ∎

# Preview: CFP '97

The Seventh Conference on Computers, Freedom & Privacy:

# Community And Commerce

March 11–14, 1997
San Francisco Airport Hyatt Regency Hotel
Burlingame, CA

## Since the first

Computers, Freedom, and Privacy Conference in 1991 the impact of computer and telecommunications technologies on our society, locally and globally, has been dramatic. Computers increasingly pervade every aspect of our lives, helping us, guiding us, protecting us, watching us, tracking us, and pursuing us. Telecommunications networks continue to undergo remarkable evolution and growth. The Internet and the World Wide Web have become household words. It's clear that we stand on the threshold of fundamental change in the ways we do business and engage in political and social interaction.

This change has transformed even such fundamental notions as speech, assembly and property rights, throwing into question basic social conventions and legal protections. Global economies and networked communities span international boundaries, challenging existing economic, political, and social systems.

Community and commerce, the twin themes of this year's conference, are at the nexus of this change. They reflect ancient ideas central to human society.

"Community" harkens back to the notion of the polis, raising the question of whether so-called virtual communities can be true communities at all. If they are, how can they govern and regulate themselves? What standards should they enforce, and how? And how will they relate to the traditional communities in which we live most of our lives?

"Commerce" calls to mind the agora, the

original marketplace of goods and ideas. New efforts to invigorate cyberspace with the energies of entrepreneurs have led to dramatic clashes between proponents of privacy and civil liberties, and proponents of social efficiency, law enforcement, and other social interests. The outline of the modern agora remains largely ill-defined, awaiting the establishment of new customs, rules, and laws.

The Computers, Freedom, and Privacy Conferences were created to provide a much-needed neutral arena in which people from widely differing backgrounds and positions can exchange perspectives and reason together about the effects of technology on modern society.

The tutorials, plenary sessions, and working groups of CFP '97 cover a broad spectrum of these issues. If the issue is hot, we're debating it. And we hope you'll join us.

## Registration & Attendance Information:

CFP '97 Registration
PO Box 6657
San Mateo, CA 94403
voice: (415)548-2424
fax: (415)548-0840
email: cfpinfo@cfp.org
URL: http://www.cfp.org

## Tuesday March 11, 1997:
### Tutorials

**9:00 am–12:00 noon**
**Morning Tutorial Sessions**
The Economics Of The Internet
Hal Varian, Dean, School of Information Management & Systems, University of California
**Regulation Of Internet Service Providers**
Alfred Mamlet, partner, Steptoe & Johnson
**The Latest In Cryptography**
Deborah Hurley, executive director, Terra Nova
**The Constitution In Cyberspace**
Mike Godwin, staff counsel, Electronic Frontier Foundation

**2:00 pm–5:00 pm**
**Afternoon Tutorial Sessions**
Infowar: The Day After
Roger Mollander, RAND (invited)
**Personal Information And Advertising On The Net**
Saul Klein, VP marketing, Firefly Networks
Donna Hoffman, professor, Owen Graduate School of Management, Vanderbilt University
**Transborder Data Flows And The Coming European Union Requirements**
Herbert Burkert, legal advisor to the European Union
**Intellectual Property Rights On The Net**
Pamela Samuelson, professor, Boalt Hall School of Law / School of Information Management & Systems, University of California

## Wednesday March 12, 1997: Definitions of Community & Commerce

**9:00–10:30 am**
Comparative International Perspectives On Politically Controversial Speech
Speakers will include Herbert Burkert, legal advisor to the European Union, John Brownlee, Trinite Van Doorn (invited), Ignatius Ding, Chinese democracy activist, Todd Lappin, Wired / HotWired and Declan McCullagh, TIME Magazine. Moderator Charles Marson

MICROTIMES • FEBRUARY 5,

# Guide

**11:00–12:30 pm**
**Social Issues Raised By The Commercial Development Of The Net**
Speakers will include Lori Fena, Electronic Frontier Foundation; Jason Olim, CDNow; Ariel Poler, I/PRO; and Christine Varney, Federal Trade Commission. Moderator: Donna Hoffman

**12:30–2:00 pm**
**Lunch / Parallel-track working sessions:**
**The Case Against Privacy**
David Brin, novelist/futurist
**Cyberbanking**
Peter Swire, professor, Ohio State University
**Rights In Avatar Cyberspace**
Bruce Damer, director, Contact Consortium
**Public Key Infrastructures**
Brad Biddle, partner, Cooley, Godward, Castro, Huddleston & Tatum
**Sexual Harassment In Cyberspace**
Stuart Biegel, professor, UCLA

**2:00–3:30 pm**
**Governmental & Social Implications Of Digital Money**
Speakers will include Roger Clarke, Australian National University; Esther Dyson, *Release 1.0 / EDventure*; Tim May, Crypto-anarchist; and Michael Vatis, US Department of Justice. Moderator: A. Michael Froomkin

**4:00–5:30 pm**
**International Perspectives On Cryptography**
Speakers will include leading representatives of government that are shaping cryptography policies for the 21st century: Nigel Hickson, Department of Trade and Industry, United Kingdom; Deborah Hurley, Terra Nova; Yasutoshi Ishizuki, Telecommunications Advancement Organization, Japan; Stephanie Perrin, Industry Canada; Michael Vatis, US Department of Justice. Moderator: Stewart Baker

**7:00 pm: Dinner**
Birds Of A Feather Sessions

## Thursday March 13, 1997: Violations Of Community Norms/Problems In Commerce
**9:00–10:30 am**
Cypherpunks ▪ Cybercops / Rules For Cruising

The Information Superhighway
Moderator: Kevin Manson

**11:00–12:30 am**
**The Communications Decency Act–A Preview Of The Supreme Court Argument**
This session will preview the arguments that may be put before the Court when it hears oral arguments over the constitutionality of the CDA. The advocates will include Mark Rasch, of S.A.I.C.; Tom Nolan, of Nolan & Armstrong; Tom Guidoboni, of Bonner, Wishner & Bonner; and Stewart Baker, of Steptoe and Johnson. A panel of distinguished state and federal judges will preside over the arguments and question the advocates. The moot court is being sponsored by the American Bar Association Criminal Justice Section.

**12:30–2:00 pm**
**Lunch / Parallel-track working sessions:**
**Domain Names**
Janet Cullum, partner, Cooley, Godward, Castro, Huddleston & Tatum
**Government Regulation Of Ecash**
Julia Gladstone, professor, New England School of Law
**How A Skiptracer Operates**
Jim Drinkwater, Decision Strategies International
**The Code As Law: How The Architecture Regulates Behavior, Or Why Barlow Libertarianism Misses The Point**
Larry Lessig, professor, University of Chicago
**National I.D. Cards**
Mary Anne Stevens, chair, Treasury Board of Canada (invited)

**2:00–3:30 pm**
**Spamming**
Speakers will include Rav Avrahami; Bill Burrington, America Online (invited); David Flaherty, privacy commissioner, British Columbia (invited); John Gilmore, Electronic Frontier Foundation; Ron Plesser, Piper & Marbury; and Christine Varney, Federal Trade Commission. Moderator: Stewart Baker

**4:00–5:50 pm**
**Infowar**
Speakers will include Ron Skelton, Electric Power Research Institute; Roger Mollander, RAND (invited); and James Werth, Federal Bureau of Investigation's Infrastructure Protection Task Force. Moderator: Ross Stapleton-Gray

**7:00 ▪ Dinner**

**9:00 ▪**
Information-Gathering Session—Executive Order 13010
Birds Of A Feather Sessions

## Friday March 14, 1997: The Evolution ▪ ▪ ▪ Community/21st Century Commerce
**9:00–10:30 ▪**
What's Hot
Moderator: Lance Hoffman

**11:00–12:30 ▪**
**The Creeping Propertization Of Information**
Speakers include Herbert Burkert, European Union; James Boyle, American University; Niva Elkin-Koren, Haifa University; Steve Metalitz, Information Industry Association, and Mark Stefik, Xerox PARC. Moderator: Pamela Samuelson

**12:30–2:00 pm**
**Lunch / Parallel-track working sessions:**
**Developments In European Intellectual Property Law**
Alistair Kelman, ILC Telepathic, Ltd
**Virtual Communities**
Jon Lebkowsky, cyberspace journalist/activist
**Archives, Indexes, And Privacy**
Brewster Kahle, founder, The Internet Archives
**Cryptography And The First Amendment**
Cindy Cohn, associate, McGlashan & Sarrail
**The Future Of CFP**
Kent Walker, chair, CFP '97

**2:00–3:15 pm**
**The 1996 Elections—Creating ▪ ▪▪ Democracy**
Speakers will include Graeme Browning, *National Journal*; Chris Casey, Democratic Senate Technology staff ▪ author of *Hill of ▪▪*; Todd Lappin, *Wired* magazine; Mike Russ▪▪▪, islative assistant to Sen. Conrad Burns; Nan▪ Robischon *Time* Magazine and Jonathan▪▪ Center for Democracy & Technology. Moderators: Shabbir J. Safdar, VTW and Doug Schuler, Computer Professionals for Social Responsibility

**3:30–5:00 pm**
**The Coming Collapse Of The ▪▪▪**
(Participants to be announced) ▪

# Web Page Listings

## COMPUTER PRODUCTS

**1-888-CD Movies Plus MPEG** http://www.cdmovies.com/ Browse our Video-CD/MPEG catalog movies music videos, kids sports adult, and more. Also the latest in entertainment technology [Exp #162]

**ACP Superstore** http://www.cyberswap.com We offer computer swapmeets ■■■ auction house for computers and electronics, a closeout warehouse, and specials [Exp #162]

**Alternative Resources Corp.** http://www.alrc.com Project-based national corporation specializing in large, state-of-the-art desktop and networking technical opportunities [Exp #162]

**Applied Computer Systems** http://www.apcom.com We specialize in new and used Sun and Sun-compatible workstations, servers, and parts. [Exp #163]

**Autospec** http://www.cruso.com/~autospec/ Relevant detailed conceptual access to media, markets, and collections using site-filter vocabularies—SIG pages [Exp #162]

**Blue Planet** http://www.true-planet.■■■ Your source ■■ qualify storage solutions, including CD-ROM optical, hard drives, ■■■ laptop drives [Exp #162]

**Cartridge** ■■■ http://www.cartridge1.com Ink-Jet cartridge specialists. New technology for all ■■■ ridges [Exp #162]

**CCI** http://www.censucom puter.com Beethern ■■■ tprise-based and ■■■ ■■■ and system integrator specializing in personal ■■■■■■■ hardware ■■■■■ [Exp #162]

**Cloud Dragon Design** http://www.clddesign.com Digital Dragon 1 Dung program available for ■■■■■ tion. A new interface to Bone

Computopia http://www.h computopia.com [Exp #162]

**Cyber Plaza USA** http://usa.cplaza.or.jp NEC's Cyber Plaza features a weekly column by Ken McCarthy ■■■ business and technological developments in Silicon Valley. [Exp #162]

**Donovan Distribution Co** http://■■■■.com/donovan/ Power Protection products. We buy, sell, trade, rent repair Uninterruptible Power Systems [Exp #161]

**■■■ Home And Building Automation** http://www.eiba.com/home_trm.html E18 The Contemporary Open Building Management System—an open multivendor and multipurpose communication platform [Exp #161]

**Electronic Components Sourcing Guide** http://www.electrobase.com A comprehensive sourcing guide for electronics components [Exp #162]

**Gazillionaire Deluxe Shareware** http://www.gazillionaire.com Gazillionaire load.html [Exp #161]

**HD Computer Co.** http://www.netcom.com/~mike giruhge.html Provides PC and Mac outgoing service [Exp #161]

**HiTek Solutions, Computer Education Centers** http://www.hiteksolution.com/hiteksolution. Novell and Microsoft certification training providers (714) 474-8270 [Exp #162]

**Internet Telephone Kit** http://www.pertechmedia ■■■ Low-cost voice communications anywhere in ■■■■ ■■■ computer-to-computer. [Exp #161]

**Kerry's Software Testing** http://www.crl.com/~rally-testing.html Reference page for links related to software testing and ■■■■ [Exp #162]

**macintaeshco.com** http://www.macintaeshco.com An

online destination for Mac users. Shareware, support, live chat, classifieds, news and ■■■■ [Exp #161]

**MacSite Weekly** http://■■■ geocities.com/Silicon Valley/9248/ The Mac enthusiast's source for good news, reviews, hot tips, and useful links. [Exp #162]

**Master Wizard's World** http://members.aol.com/MstrWzrd Where you'll find a whole world of computing from software to networks, POS 14 POP [Exp #162]

**MDS Disk Service** http://home.earthlink.net/~save data Data recovery for all operating systems and media storage devices [Exp #162]

**MicroLAN Technologies, Inc** http://www.microlantech.com Personalized training and ■■■■ Microsoft MCSE and CNE. Customized network design, ■■■■■ services and support [Exp #163]

**Opcode Systems** http://www.opcode.com/ Opcode Systems a leading manufacturer of music software and hardware, has completely updated and redesigned its Web site [Exp #162]

**PC Guardian** http://www.pc guardian.com/ A leading developer of computer security encryption, data protection and workstation control ■■■ security products [Exp #162]

**RTG Data Systems** http://www.rtgsoftware.com Features RTG Bills, a low-cost Windows-based legal time and billing program for small legal firms [Exp #162]

**San Francisco AdNet** http://www.stadnet ■■■ The Bay Area online advertiser Advertise now at super low ■■■■ [Exp #161]

**Software Outlet** http://www.softwareoutlet.com A mail order company ■■■ ■■■ in low-cost software ■■■ 1-800-2■0-SOFT for a

free catalog [Exp #161]

**TLC—Tech Logic Computing** ■■■ http://www.theprobe.com/sub_pag/techlogi.html Computers services repairs and more [Exp #161]

**Tower Hill Development** http://■■■.towerhill.com Control information overload. Download Knowledge Cision for free to help you manage your data [Exp #163]

**TransInternational Co., Ltd** http://www.transinter national.com Home of Trans Data Systems, offer the Amiga support [Exp #162]

**TRUC Computer** http://www.infochase.com/truc Sales, service, upgrades, parts, and systems at a discount [Exp #162]

**Valiant Software** http://members.aol.com/gvaliant Download ■■■ evaluation copy of Winimage 3.0, a disk utility that enables users ■■■ make a disk image from a floppy [Exp #161]

**Windswept Shareware** http://ourworld.compuserve.com/homepages/greg debacker Choose from a selection of shareware games and utilities for Windows [Exp #161]

**WorkLink—ADA Solutions** http://www.worklink.net Adaptive computer products and devices—Dragon-Dictate (talk to your PC) RSI products ergonomic workstations, and ■■■ [Exp #161]

## WEB/INTERNET

**■■ World Of Classifieds** http://www.hyf.com/ads Classified ■■■ from ■■ ■ 2 Free posting order [Exp #162]

**A & Z Consulting, Inc.** http://■■■■.d■.■■ Web/Internet ■■■ services [Exp #161]

**Adgratix** http://www.a.■■ gratix.com/info/ranza Provides inexpensive space and design [Exp #161]

**Advent Media** http://www.adventmed-a.com Profesional affordable Web development including page design graphic art CGI programming and Web hosting [Exp #162]

**Bay Area Shopper's Corner** http://www.readyselnet.com Advertise your business on the internet For business listings available Web site design [Exp #162]

**C4U.com** http://www.c4u.com A leading Web presence provider secure server access to CGI Bin and more [Exp #163]

**Citysearch** http://www.ch search.com We put cities online. We have news chat forums and ads from a wide variety of businesses and charitable groups [Exp #163]

**CreaTech** http://www.crea tech.com Exceptional reasonable Web page design, implementation, and maintenance [Exp #163]

**CyberCityMall** http://cyber citymall.com Affordable Web page provider. Web page hosting. $5 or less per month [Exp #161]

**Dragnet Internet Server Provider** http://www.dragnet codemails.com dragnet.htm ■■■ offer complete unlimited hours service at $16.95 a month. First month is free [Exp #161]

**E.C.N** http://www.ecn.com Full Internet access free Web page ■■■ games and more ■■■ trial [Exp #162]

**Equllio Web Design** http://www.equilio.com [Exp #163]

**Headline Media** ■■■ http://www.headnet.■■■ Full-service Web page design for Southern California and beyond [Exp #162]

**HKNet Co. Ltd** ■■■ http://www.hknet.com ■■■ leading ISP for business and professional communications organizations including for traveling net users [Exp #161]

http://www.bonsaiweb.com


http://www.chinavoyages.com

**Human Dimensions** http://www.humandimensions.com Web design and content development from professional designers and programmers. [Exp. #162.]

**Iloveltheweb** http://www.ilovetheweb.com A new Web guide that's like Yahoo, but different too [Exp #163.]

**Integrated ▓▓▓ Designs** http://www.hooked.net/~tana bode Free professional Web page design, $2 image scanning, Java and Java-Script coding, animated graphic designs. [Exp. #163.]

**Joe's CyberPost** http://www.joes.com/ Publish your own free "instant home page" in minutes. [Exp. #161.]

**LocalSites** http://www.localsites.com Local area directories of Web sites. Opportunities available to manage you own Local-Sites area. [Exp. #162.]

**MainNet** http://www.mainnet.net Provides a full range of Internet and networking services and solutions, fast access, reliable hosting, and excellent services. [Exp #161.]

**My-Kids.com** http://www.

**my-kids.com** Committed to developing Web sites that capture life's precious moments and break down the barriers between family and friends [Exp #161.]

**Net Host** http://www.host1.com We provide quality services including Web hosting ($19.95) design, promotion, and domain registration at low costs. [Exp. #161.]

**Online Presence Providing** http://www.downwithopp.com/ Do business online for $1 per day. Unparalleled service, quality, and value. Experience the difference. [Exp #161.]

**P-Net** http://www.p-net.com/ P-Net offers complete design, service, and support for your Web pages, including HTML coding, CGI scripting, and scanning. [Exp #161.]

**Pacific Internet Systems** http://www.pbs1.com Internet access and Web page housing. First month free (714)452-9110. [Exp #161.]

**Pasadena Networks** http://www.pasadena.net/ Let Pasadena Networks host your business or personal

Web pages. [Exp. #163.]

**Rick's Webpages By Design** http://www.megamed.com/RickHome/index.html Offering a unique combination of Web page design—quality and creativity, both personal and for business. [Exp. #162.]

**Spyglass Internet Advertising** http://www.oframps.com/spyglass Affordable, high-quality Web site development. Helping you market your business on the Internet. [Exp. #162.]

**Star One Internet** http://www.scv/net Now serving Santa Clarita Valley. Unlimited access $19.45 ▓▓▓ plus ▓▓▓ set-up. Web hosting for businesses. [Exp. #161.]

**SteppinStone Web Design** http://www.primenet.com/~kantoku/see/design.html Affordable Web design. [Exp. #161.]

**SupportHelp.com** http://www.SupportHelp.com The Internet's newest search engine [Exp. #161.]

**▓▓▓ Solutions** http://www.tmsolutions.com Web hosting and development. Custom online database applications and programming [Exp. #162.]

**UC World Network** http://www.UCWorld.net We specialize in consumer and business dialup services, Web hosting and design. [Exp. 164.]

**Virtual Servers** http://www.adgrafix.com/info/ighee Come find out why your organization needs a Web site. [Exp #163]

**Web Design Resource Center** http://www.bba3.com/wdrc Affordable Web design and hosting. [Exp #163.]

**Web Hosting & Web Design** http://www.webplaza.com Specializes in Web hosting, design, and presence. Call for further details 1-800-493-2752. [Exp #161.]

**Web/Intranet Tutorial Site** http://www.squareonetech.com Attention newbies. Check out SquareOne's Web tutorials and Internet glossary. ▓▓▓ ▓▓▓ [Exp. #162.]

**Whole Earth Networks** http://www.▓▓▓.net Providing dial-up ▓▓▓ Web

hosting, and high speed connections. Specializing in turnkey solutions for commerce on ▓▓▓ Internet. [Exp. #162.]

**Wishing Well Sysops' Corner** http://www.geocities.com/SiliconValley/1838 Best BBS resource on the Internet. [Exp. #162.]

**WDLNET** http://wdlnet ▓▓▓ Complete Internet Service Providers [Exp. #162.]

**Working Assets Online** http://www.wald.com The first ISP that donates money (1% of Internet charges) to groups working to house homeless, save the rainforests, and others. [Exp #162.]

## SERVICES ▓ PRODUCTS FOR SALE

**4insurance.com** http://www.4insurance.com Get the best rates on insurance without the hassle. Free online quotes. [Exp. #161.]

**American Greetings Online** http://www.americangreetings.com Order and send cards, flowers, candy, and more from your personal computer. [Exp. #161.]

**Anil Raman Insurance Agency** http://www.wco.com/~raystark/ramam.html Personal and commercial lines of insurance English and Hindi spoken. [Exp #161]

**Antique Mall** http://www.nnet.com/users/antiqmal A database of antique items, dealers, collectors, appraisers, repair, and restoration. Free appraisal ▓▓▓ one item. [Exp. #161.]

**The Booksmith** http://▓▓▓ booksmith.com The Internet's leading independent bookstore. search our inventory. browse store selections, author events, and more. [Exp. #162.]

**Bootquarters, Inc.** http://www.bootusa.com One stop shop ▓ major name brand footwares: Timberland, Caterpillar Frye, Harley Davidson, and more. [Exp. #163.]

**Cherry Coke Wall** http://▓▓▓ ▓▓▓ Designed to break the barriers of conventional marketing ▓▓

the Internet. [Exp #161]

**Coffee Anyone?** http://www.coffee-anyone.com The original computer coffeehouse. [Exp. #161.]

**Commercial-directory.com** http://commercial-directory.com/free-ads Place free classified ads in hundreds of newspapers worldwide. [Exp. #162.]

**Compare.net** http://www.compare.net An interactive shopping guide to today's automobiles, audio/video electronics, services, ▓▓▓ appliances [Exp. #163.]

**Computer ESP** http://www.ovision.com A free one-stop directory ▓ easily save you time and money when shopping with cyberstores. [Exp. #162.]

**Conquest Industries** http://www.vpm.com/conquest/ Manufacturers of Spincasting machines, the ideal tool for the creative entrepreneur. [Exp #162.]

**Cyber City 900** http://www.winnerpage.com/746625 Find a date, discover your future, or explore a super network of trivia, advice, and sports. [Exp. #161.]

**Cyberdocs** http://www.cyberdocs.com Available around the ▓▓▓, Cyberdocs provide ▓▓▓, online, medical care for patients in the comfort of their own home, or wherever they may access ▓▓▓ Internet. [Exp. #161.]

**Cybermation** http://www.cybermationsys.com Manufacturer and distributor of the versatile, affordable SKC-2000 motion control system. [Exp. #163.]

**DB Publications** http://www.dbpublications ▓▓▓ Printing ▓▓▓ packaging for Silicon Valley. ▓▓▓ our top-name clients. ▓▓ request a ▓▓▓ [Exp. #162.]

**Digital Stock Corp.** http://www.digitalstock ▓▓▓ Publisher of high-quality, royalty-free stock photography. [Exp. #161.]

**Dogstuff** http://www.lasernet.com/dogstuff 1997 Individual dog breed ▓▓▓ dars security signs, rubber stamps, freezer magnets, and more. [Exp. #161.]

**E-Benefits** http://www.e-benefits.com Internet-

based health insurance agent that quickly allows either an individual or a small business employer to identify appropriate benefits plans and confirm with minutes. [Exp. #161.]

**Executive Greeting Cards** http://www.baccoc.org/executive Personalized business greeting cards. Currently displaying Christmas cards and ▓▓▓▓ some with Spanish and French verses [Exp. #161.]

**▓▓▓ Front Window** http://www.joes.com/frontwa Unique gifts and collectibles [Exp. ▓▓▓.]

**Futon Depot & Discount** http://ggplay.com/clients/futon/adv/futon-1.html Examples of furniture and futons available. Download discount coupon. [Exp. #161.]

**Go ▓ What's New** http://go2whatsnew.com An Internet directory service specializing ▓ the top and latest products from Fortune 500 to ▓▓ Companies. [Exp. #162.]

**Jim Zook—Illustrator & Graphic Designer** http://www.jimzook.com Web graphics and designs, ads brochures, corporate reports, etc. Available for parties, weddings, and bar mitzvahs. [Exp. #162.]

**Jones Biomedicals & Laboratory, Inc.** http://▓▓▓ bers.aol.com/jonb▓▓▓.htm Provides sample materials to educational institutions, fish food kits, and novelty items [Exp. #161.]

**L&L Enterprise** http://▓▓▓ bers.aol.com/lgnpsesus/lrps.htm L&L Enterprise is a national and international information and mail-order distributionshop. [Exp. #162.]

**LifeScan, Inc.** http://www.LifeScan.com Products, company, and diabetes self-care information to improve the quality of life for people with diabetes. [Exp #161.]

**The Market Place 2000** http://www.thema-kspace.com TMP2000 is an ▓▓▓ active real-time online database of product information in business-to-business secondary markets. [Exp #161.]

**Melissa's World Variety Produce** http://www.melissas.com Tempt your palate on this journey through the delicious and healthy world of exotic produce and specialty foods [Exp. #162.]

**Metro Media** http://www.metrostation.com Information about Metro Media, ■ multimedia company specializing in print, video, and interactive communications [Exp. #162]

**Nikon Camera** http://www.nikonusa.com [Exp. #162.]

**Pacific Corner Mall** http://www.pacificcorner.com Offers Chinese specialty items—music, CDs, computer games, cook books, novels, health items, tea, etc. [Exp. #161.]

**Paren Enterprises** http://www.totalmarketing.com/perasen! The biggest and best source ■ the Internet

for special interest and instructional videos and CD-ROMs [Exp. #162.]

**Performance Contracting, Inc.** http://www.performancenet.com Mechanical insulation ■■ asbestos abatement contractor, capabilities, and qualifications. [Exp. #162.]

**Perry Ellis Menswear** http://www.pemenswear.com/ [Exp. #161.]

**PetExpress** http://www.PetExpress.com Online pet supplies for all types of pets. [Exp. #163.]

**PiSoft Corp.** http://www.pisoft.com Custom app/dev programming — Power-Builder, SQL, VB, Access, CGI, Perl Using MTX or Carillon Financials Application system. [Exp. #162.]

**Plaza Dental** http://www.plazadental.com Visit our dental information library online. [Exp. #162.]

**The Probe** http://www.the probe.com/ Internet Marketing Shopping ■ ■■ [Exp. #163.]

**Promotional Press** http://web.wavenet.com/~jmonter For all your printings from A to Z. [Exp. #163.]

**Quality Translations For Science And Industry** http://www.industry.net/adex.worldwide [Exp. #161.]

**Rich's Directories** http://www.goplay.com/clients/rich/adv/richs-1.html A site with a chance to ■■ free directory and get info on the products available [Exp. #161.]

**Shotokan Karate Of America, Garden Grove, CA.** http://www.inwinc.com/2003/garden.htm Events, National Dojo directory, class schedule, info about the history of Shotokan Karate of America [Exp #163.]

**ShrinkTank** http://www.shrinktank.com/ Psychology program and text files, links to testing sites, other psychology software sites [Exp #161.]

**Smile Doc** http://www.smiledoc.com/dentist Download our new, free multimedia dental software program. Also featuring articles from experts and "ask the dentist." [Exp #161.]

**Sunshine International Pen-pals** http://sunshine-girls.com/ Asian women desire romance, marriage. World's largest correspondence service since 1984. Free photobrochure [Exp #161.]

**Surf The Web On Your TV** http://www.futuronet-pctv.com Descriptions of new consumer products, as well ■ business opportunities for distributors of our new products [Exp #163.]

**Traffic Talk License Plate Frames** http://www.traffictalk.com Design a personalized license plate frame for your ■■ [Exp #162.]

**The Tower Of London For Sale** http://www.towerof london.co.uk Own ■ authenticated piece of England's historic past. [Exp #162.]

**USANA Century Team** http://crisi.com/ivanhoe A health-er life and financial freedom Introducing USANA, home-based business for your life [Exp #162.]

**The Variety Store** http://thevarietystore.com Gift ideas, figurines, novelty items and doll houses [Exp #162.]

**Virtual Treasures** http://www.vtme.com Twenty-four #162.]

herbal extract formulations designed to improve you overall health. [Exp. #161.]

**WealthCom Telecommunications Cooperative** http://www.cruzio.com/~telemat/wcagt/40822729.htm Finally, long distance rates you can afford and a calling plan you can understand [Exp. #162.]

**Wine Enthusiast** http://www.wineenthusiast.com/ The Wine Enthusiast Web site is ■■ online shopping and information resource [Exp. #161.]

**World Web Collectibles** http://www.wwcollectibles.com/ Features a professional marketing report that can help you more effectively advertise on the Web. [Exp. #161.]

**Active Investors Internet** http://www.successus.com Experienced Investors offering education and investment opportunities in real estate and success training [Exp. #162.]

**Advantage Funding** http://commercial-directory.com/advantage Purchaser of Trust Deeds/Mortgages (seller-financed). Lender sources also available 1-800-604-6394 [Exp #162.]

**America's Business Funding Directory** http://www.businessfinance.com ■ business capital search engine that is 100% free ■ entrepreneurs [Exp #162.]

**Bay Area NewRealty** http://www.newrealty.com Searchable listings ■■■ photos, ■■■ with calculated monthly payments ■ qualifying incomes for different downpayments. [Exp. #162.]

**Best Of The Dow** http://www.bestofdow.com/ stocks ■ historically ■■ statistically sound ■■■■ of choosing stocks ■■■■ have achieved superior results over the years. [Exp #161]

**Bury Your Debts Forever—Without Bankruptcy** http://members.aol.com/counter711/buydebt.html [Exp #162.]

**CyberEstate Mall** http://www.cyberestate.com/ A ■■■ way to buy and ■■ a home. Free property listings. [Exp #163.]

**Eagle Consulting** http://■■ irvine.qurk.com/eagle consulting Consulting and representing corporations, partnerships, and joint ventures. Invests in wireless communications, software, Internet, and emerging growth companies. [Exp. #162.]

**Forever Group** http://www.appleforever.org Investment group with focus ■■ Apple Computer [Exp #162.]

**FundAlarm** http://www.fun dalarm.com Is your mutual fund a loser? FundAlarm helps mutual fund investors make the sell decision [Exp #163.]

**HomeNet** http://home.bcg.net Search engine for homes for sale, home financing and improvement advice, and industry professionals [Exp. #162.]

**In-The-Money** http://www.inthmo.com/ Secure credit and low interest rate credit card info, and credit repair software. Thoroughbred Race selections also available [Exp #162.]

**Nora Robinson, Realtor** http://www.nrobinson.com Real Estate agent serving the Campbell, Cupertino, Los Gatos, Saratoga, and Willow Glen areas. [Exp #162.]

**Real Estate Help** http://www.realestatehelp.com Offering guides, tips listings, consumer connections, and professional services [Exp #161.]

**Toolomena Associates** http://■■ pnment.com/~pahat/ Supports newly-formed and first-stage high-tech product companies. We offer business planning, personnel for marketing, finance ■ operations, and investment services [Exp #161.]

**Working Class Investor Newsletter** http://www.geocities.com/WallStreet/1456 Socially conscious investing ■■■■ Fund for Woman ■■■ Funds, company provides ■■■ plus ■■■ ■■■ conscious investor. [Exp. #162.]

**Counsel Connect** http://www.counsel.com Counsel Connect, the online ■■ exclusively for attorneys will make its service free to lawyers in government and nonprofit offices [Exp #161]

**■■ Public On** ■■ http://www.scor-net.com/home page/bbtte.htm Position you company to raise capital. S F law firm [Exp #163.]

**Law Offices of John ■ Kahn** http://members.tripod.com/~jkabn/index.html Attorney handling Computer, Bankruptcy, and Real Estate law, and transactional matters in San Jose CA [Exp #162.]

**LawAid** http://www.lawaid.com Created to solve the problem of finding the related services in a simple and easy-to-use database [Exp. #161.]

**Legal Survival ■■■■ letter** http://www.fram.com/newsletter.html Monthly online publication featuring the ■■■■ developments in consumer, creditor, divorce, estate planning, medical and more [Exp #162.]

**Methaven ■ Associates** http://members.aol.com/bmethven Business and computer law, contract, licenses corporation, LLC's, copyrights, trademarks and more [Exp #162.]

**Paralegal Services** http://members.aol.com/paralegal-ga Paralegals qualified to assist individuals and businesses with divorce, ■■■ ■■■■ tenants and ■■■■■■ in the SG Valley and Inland Empire. [Exp #162.]

**Richard J. Greenstone** Attorney at Law http://■■■ coming Copyright, trademark, licensing business and transactions ■■ the computer entertainment and publishing industries [Exp #162.]

# Online Guide

## Web Page Listings continued

**Surfing Lawyer** http://www ███████ Canada's most comprehensive legal Web site ██████ ████ of interest to Canadian lawyers and the general public as ████ as freeware, shareware, and lawyer jokes. [Exp #161]

**WWW Law Firm Directory** http://pages.prodigy.com/CA/rawb/lawdir.html Free directory of ████ firms ██ the Net for consumers and attorneys. [Exp #161]

### EMPLOYMENT/EDUCATION

**Eduzone** http://www.eduzone.com The most comprehensive site for educational resources and information available on the Web. [Exp #162]

**eZone** http://www.mcp.com/waite.ezone Interactive on-line education site offering self-paced courses in Perl, HTML, C++, Java. Includes mentors. [Exp #161]

**High Tech Careers Virtual Job Faire** http://www.vjf.com/ Features over 500 employers listing over 15,000 high-tech career opportunities, a Resume Center, career magazines, and more [Exp #161]

**Hotjobs.com** http://www.hotjobs.com The new generation of ████ employment opportunities. [Exp #161]

**JobSmart: N. Cal. Job Search Guide** http://jobsmart.org Local job banks, newspapers, job hotlines, job fairs, salary info, and more from Bay Area Public Libraries and KPIX. [Exp #161]

**Los Angeles Pierce College** http://cgi.amazing.com/pierce/ Offering an integrated catalogue and schedule ██ classes search engine [Exp #161]

**Mactivity** http://www.mactivity.com Educational conferences for designers and developers using Macs [Exp #161]

**Northern California Job Search Guide** http://jobsmart.org Local job banks, newspapers, job hotlines, ██ fairs, salary info, and ████ [Exp #161]

**Unique Part Time Jobs** http://members.gnn.com/reserchco/respub.htm Your complete source of fun, interesting and lucrative spare-time jobs. [Exp #162]

### ORGANIZATIONS

**American Civil War Association** http://www.acwa/ Civil War re-enacting organization in California Battles, living history, and display of life during the 1860s. [Exp. #161]

**American Lung Association** http://www.lungusa.org The ultimate Web source on lung disease and lung health issues. [Exp. #162]

**American Medical Association** http://www.ama-assn.org [Exp. #161]

**Amiga Users Group of Long Beach, CA.** http://www.loop.com/~auglb [Exp. #162]

**Ark Trust, Inc.** http://www.arktrust.org/genesis Dedicated to exposing animal cruelty through ███ powerful voice of the major media. Presenter of the Genesis Awards [Exp #162]

**The Ballona Wetlands** http://eco.bio.lmu.edu/www.ballona/ballona.htm A grassroots environmental organization dedicated to the preservation and restoration of the Ballona Wetlands [Exp #163]

**CARES** http://www.geocities.com/~cares Cult Awareness Resources provides information and resources to campus community about cult activity [Exp #162]

**Community Peacemakers** http://emf.net.60/~swsaden/index.html Take a stand for peace non-violence and social justice. Be a communi-ty peacemaker! [Exp #162]

**Contact Center Network** http://www.contact.org/ A New York-based nonprofit organization that maintains the most comprehensive directory of ✶nonprofit resources ██ the Internet [Exp #163.]

**CTWO: Center For Third World Organizing** http://www.igc.apc.org/ctwo/ Established in 1980, CTWO is nationally recognized for its innovative organizer training leadership development programs in communities of color. [Exp. #162]

**GCIU Local 10-N** http://home.earthlink.net/~dpadgett/ Graphic Communications International Union. The Union of ███ Pressper-sons of the LA Times. [Exp. #162]

**Hard Of Hearing** http://www.hoh.org BBS/Web pages for deaf and hard of hearing. Clubs for ALDS, SHHH, and organizations [Exp #162]

**Immunet** http://www.immunet.org A leading source of information about AIDS on the Web. [Exp #163]

**Intalg** http://members.gnn.com/intalg Improve your health naturally, without drug side affects. Sub-scribe ██ this free newsletter. [Exp #162]

**Intercultural Dating Club** http://www.starcreations.com/idc IDC for singles interested in interracial/intercultural dating. Singles parties, rotation dinners and matchmaking [Exp #161]

**International Small Business Consortium** http://███ isbc.com/ Helping small businesses find busi-ness opportunities world-wide. [Exp. #161]

**National Center For Employee Ownership** http://www.nceo.org Information about employee stock own-ership plans (ESOPs) and other forms of employee ownership [Exp #163]

**Northern California Inde-pendent Booksellers Asso-ciation** http://www.nciba.com/ Resource for readers and consumers directory of N. California bookstores online stores, news and more [Exp #162]

**Peninsula Computer Club** http://www.serius.com/jb/pcc5.htm Peninsula Com-puter Club for IBM-Com-patibles [Exp #161]

**Polly Klaas Foundation** http://www.pollyklaas.org Featuring child safety infor-mation, suggestions for recovery of missing chil-dren. Info on currently missing children, and some of PKF's accomplishments [Exp #162]

**SCORE (Service Corp of Retired Executives)** http://mymall.com/score A free management consulting organization sponsored by the USBA assisting small businesses to start-up & grow [Exp #162]

**SCV PC Group** http://www.smartlink.net/~scvpcg The Santa Clarita Valley's PC Group dedicated to PC lit-eracy. Come join us. [Exp #163]

**Sequoia High School Alumni Association Online** http://www.belmont.gov/orgs/alumni/ Alumni information for three SF Penin-sula high school's Sequoia, San Carlos and Raven-swood [Exp #162]

## PUBLICATIONS

**Childrens Fables** http://
cruzio.com/~nikan/
index.htm Long before Disney's Pochantas Potawato-
mi, Indian children had
their own heroine—Winnie
Two-Shadows. Read one
entire book online for free.
[Exp #162 ]

**Cybrary Of The Holocaust**
http://remember.org/
Online bookstore, liberators
testimonies, survivor stories, and more. [Exp #162.]

**Fabulous Freebies** http://
members.tripod.com/~free
bies Online 'zine presenting
items and samples available for free ■ and of the
internet. [Exp #162 ]

**Lanchester Press, Inc.**
http://www.lanchester.com/
Books on Japanese marketing strategy. ISO 9000 and
reliability [Exp #161 ]

**Los Angeles F■■■ Press**
http://www.leonardo.net/
lafp/lafp/ [Exp #162 ]

**Mansell Publishing** http://
www.mansell.com Publisher of books for Design
trade. New book, Identa-
FONT allows fast identification of PostScript fonts
[Exp #161 ]

**NetscapeWorld** http://www
netscapeworld.com The
hands-on magazine for Web
professionals. [Exp #161 ]

**The Ridge Press** http://www
■■cities.com/SiliconVal
ley/Park/3753 Computer
and internet news, informa-
tion links, icons and imag■■
Discussion area updated
■■eekly. [Exp #161 ]

**Salon** http://www.salon1999
com/ Webzine of regards
■■■ and ideas. [Exp #161 ]

**Vegas Deluxe** http://www
■vegassun.com Up to ■■
minute news from the Las
Vegas Sun, AP, and the
Christian Science Monitor
[Exp #161 ]

**Windows OnLine** http://
■■.com WinOnLine Re-
■■ (online ■-zine). [Exp]
#162]

**Wine Spectator** http ■
■■.winespectator.com
The largest circulation
■■ publication in the
world unbiased wine ratings
Exp prices on over 50.000
wines [Exp #161 ]

## ODDS ■ ENDS

**AirCal** http://members.aol
com/aircal737/reunion.htm
Information about the
upcoming AirCal reunion, a
great airline once based in
Orange County [Exp #162 ]

**Amazon City** http://www.
amazoncity.com The first
city for women on the
internet. [Exp #161 ]

**Computer Injuries** http://
■■ webz.com/stress To
alert users to the risks
involved in repetitive functions and cautions healthy
approach to computer use.
[Exp #162 ]

**Confidential Connection**
http://www.movo.com How
to meet local girls and guys
by calling a local number,
contests, Modem Butterfly's
Cyberbabble [Exp #161 ]

**Critical Thinking** http://
www.crithink.com/ Critical
thinking designed for those
who want to eliminate religious dogma from their
life [Exp #161 ]

**eDirectory** http://www.edir
ectory.com/ Over two hundred search engines from
over thirty-five countries
listed by country. [Exp
#161 ]

**El Diablo's House Of Horrors** http://home1.gte.net/
rcan/index.htm Come see
why death has been the
number one fear for humans
since the beginning of one
■■ [Exp #161 ]

**F12 Online Anonymous
Twelve Step Program**
http://members.gnn.com/
acbaird/index.html Webaholics netaholics. modemheads interholics ■
newsgroupies ■■ welcome Satirical support for
dedicated ■ working the 12
keys [Exp #161 ]

**Fingerprint Technology
Update** http://www.w3bit
com/fingerid.html [Exp
#162 ]

**Guy Kawasaki's Evangelist** ■■■■ http://www.zdnet.com/
macuser/macway/ Apple
Fellow Guy Kawasaki has
created a mailing list called
"EvangeList," a place where
Mac users ■■ share stories and ■■■■■■ industry
the state of mind that is
■■■■■ [Exp #161.]

**-ISM (N.)** http://publicmed
ia.org/ism -ISM (N ) ■ a
national video documentary
and education project that
deals ■ college students
and their views on diversity [Exp #161 ]

**Labor ■■ Holocaust**
http://remember.org.80/
educate/labor.html An introduction to the Jewish Labor
Committee [Exp #163 ]

**Massage For You** http://
members.aol.com/jlxent/
massage.htm Receive the
therapeutic benefits of ■
massage at home or office
and soothe the effects of
■ day away [Exp #162 ]

**Media Access Consultancy**
http://members.tripod.com
~dcohler/ Free Info ■■ writing news releases, public
service announcements.
handling ■■■ media interviews, and crisis management [Exp #163.]

**Nightcrawlers: The NGSN
Gothic Classifieds** http://
www.gothic-classifieds
com ■ networking and
referral service for people
into a goth ■■ industrial
scene. vampyres. fetishes
■■■ occult. [Exp #162 ]

**Plastic Surgery Resident
Home Page** http://users
aol.com/jdsaui Free info
mation for those contemplating cosmetic surgery
and "To Answer Your
Questions." [Exp #161 ]

**Psychotopia Online** http://
www.psychotopia.com
■■■■■ to exploring ■
limits ■ human sexuality
[Exp #162 ]

**SatRam** http://bbs.galanet
.net/bongiova/index.html
News ■■ views regarding
Sri Sathya ■■ living
teacher ■ the age-old
dom of India. [Exp #162.]

**VN ■■** http://www.engr
csuib.edu/~dnga/vanet.htm
The Vietnamese Net helps
you understand more about
Asia especially Vietnamese
culture. [Exp #161 ]

## PERSONAL HOME
## PAGES

**■■ Farm** http://tpu.edu/~
philip/ ■ persona ■■■
roamed with red ants. ■■
ous links in PC games
■■ and arts. [Exp #161 ]

**■■ Brea ■■■■** ■■■

**■c Safety Communications
Personnel** http://www.geoci
ties.com/~preyees 911 Dispatchers and register people
will find something interesting here. [Exp #153 ]

**Boston Tea Party** http://
www.stip.net/~boston/
Learn about legal alternatives to your SSN and spare
your children a lifetime of
taxes. [Exp #163 ]

**Brian's Wedding Page**
http://www.best.com/
supps/wedding.shtml [Exp
#161 ]

**Creosote** http://www
cafecreosote.com All-inclu-
■■■ ■■■ featuring recipies. nutritional information.
farmer's ■■■■■. ■■■ food-
related ■■■■■. [Exp #161.]

**Chaos In America** http://
■■■ online.offshore.com
avsking ■ ■■■ ■■ ■■■■
ing economic depression
and how to protect yourself [Exp #161 ]

**Cheryl's ■■■■ Menopause Home Page** http://
home.earthlink.net/~ger
ret/cheryl.htm Information
on handling ■■■ hot
flashes. cramps. bloating.
wrinkles. etc [Exp #162 ]

**Chez Jim** http://www.grs
net/~jimchevall/index.html
Jim Chevallier's ■■■■■
■■■ info on ■■ Cannes
Festival and Paris plus
science ■■■■ and genealo-
gy [Exp #162 ]

**Cichlid Research**
Page http://garnet.berke
ley.edu.2727 Information
■■ fish family ■■■■■■
for hobbyists and scientists [Exp #162.]

**Cross Country Caffeine**
http://www.emt.col/~jgm7/
maya/ccc/ Cafe ■■■ col-
lee/tea retailer ■■■■■
from ■■ over ■■ country
[Exp #161.]

**D. Bishop's Struggle For
■■■■■ Marijuana** http://
■■■■ scizcpe.com/~doreen
Learn about Doreen Bishop's fight ■■■■■ for
to use ■■■■ medicinal—
marijuana. [Exp #161 ]

**David Rowell's** ■■■
http://www.hooked.net/~
drowell. ■■■■ site for
David Rowell. San Francisco
■ multimedia designer
subtitling arts and ■■■■■
■■■■ [Exp #162 ]

## Web Page Listing continued

**Dover's Refrigerator** http://www.geocities.com/Heartland/Plains/1306 Read our fridge notes, write one of your own. [Exp. #162.]

**Escape From Cypress High School** http://www.sure.net/~kopstein/ CHSnet Ever wanted revenge on your high school teachers? Now you can with this free game. [Exp. #163.]

**Gimpel's Page** http://wwwstudents.biola.edu/~chad Easily browsed page provides free tech support for ████ platforms plus humorous works. [Exp. #161.]

**GPF Avoidance** http://home.earthlink.net/~tequila yum Commentary, VGA Planets, and other stuff. [Exp. #162.]

**The John Gotti Tribute Page** http://www.netgate.net/~ravenna/gotti.html Alleged Mafia boss, but all-around nice guy. [Exp #161.]

**Lee's Home Page** http://ourworld.compuserve.com/80/homepages/LEEGOLDSTEIN/ An eclectic site with a surf theme. Links to surfing, weather, software, HTML authoring, law and other interesting sites. [Exp. #161.]

**Lincoln-Douglas Debate** http://members.aol.com/TogaLD/index.html A site about the Lincoln-Douglas debate, especially for the Bay Area. [Exp. #162.]

**McCanna Home Page** http://www.mccannas.com Download free Web art including 3-D alphabets, textures and more by Laura McCanna. [Exp #161.]

**Mis-Magic's House** http://www.prominent.com/~jeffing When the lights dim and the air grows cold you're in Mis-Magic's House. [Exp. #163.]

**Mr. Wonderful's Lair** http://www.████ ████ Bonus Games, shareware, ████ ████ ████ more. [Exp #161.]

**Netcafe Personal Page** one ████ 135 189 2 ████ [Exp #162.]

**Nikki's ████ Page** ████ neosoft.com/nikki ████ ████ ████ e mail

Christmas presents from old diskettes [Exp. #162.]

**Ovi's World Of The Bizarre** http://www.ovis.com Absolutely shocking ultimately bizarre, but unquestionable true short reports. [Exp. #161.]

**Refrigerium WebSite** http://www.home.earthlink.net/~bless/ An entry point for useful Early Christian (<500 c.e.) resources on the Internet. [Exp #163.]

**Sako's Home Page** http://www.geocities.com/~sakos.htm Comic books, anime, art, movies, sports, java chat. [Exp #162.]

**Scott's Honda/Acura Home Page** http://www.av.qnet.com/~mickey/welcome.html All makes of Honda plus the Acura Integra. Home of Page 'O' Prelude Classified ads. [Exp #162.]

**Society Of Abidance In Truth (SAT)** http://www.SATRaguru.org/ Dedicated to Bhagavan Raman Maharshi, and teachings of Nonduat Reality, Satsang with Master Nome. [Exp #162.]

**Southern California Libraries** http://www.earthlink.net/~jsmop/library.html A comprehensive list of libraries with Web sites in S.California—public, academic, and just weird. [Exp. #161.]

**Ted Airy Cosmos Topper Home Page** http://pages.prodigy.com/FNJD74A Mallard, Captain Beefheart, Little Feat, Neon Park, Firesign Theatre, and more. [Exp #163.]

**Tutor's Web Site** http://www.angelfire.com/tx/easy123 Web site for a tutor in the Orange County/Long Beach area. Various subjects and levels. [Exp #163.]

### GOVERNMENT/POLITICS

**Corporate Watch** http://corpwatch ████ of Fortune ████ companies jump onto the World Wide ████ bandwagon who's ████ keeping a ████ eye on ████ Corporate ████████ [Exp #163.]

**First Amendment Center** http://www.fac.org/Congress shall make no law respecting

establishment of religion, or prohibiting the free exercise ████ thereof; or abridging ████ freedom of speech, or of the press, or the right of the people peaceably to assemble, and to petition the government for a redress of grievances. [Exp. #163.]

**NASA** http://observe.ivv.nasa.gov/ NASA has entered cyberspace and now offers ████ Internet window ████ the best in NASA ████ and space knowledge [Exp #161.]

**NASA Spy** http://observe.ivv.nasa.gov/observe/exhibit/spy/spy.html NASA Spy, the new-est feature of NASA's Observatorium Web site, includes declassified satellite images, provides background on the spy satellite program, and allows you to order copies of images [Exp #161.]

**US Consumer Information** http://www.pueblo.gsa.gov Find the latest information from more than forty US government agencies [Exp #161.]

**Women Of NASA** http://observe.ivv.nasa.gov/observe/ootd.ootd.html NASA's Observatorium looks at the traditionally male world of science and turns its lens on itself. [Exp #162.]

### ARTS

**Film, Pen, & Brush Conspiracy** http://www.prome.net.com/~fundvindex.html Afrocentric Web site reflecting digital artistry also featuring clipart catalogs, and unique compositions. [Exp #162.]

**ACiD Productions** http://www.acid.org An online gallery showcasing the best art, music, and related information published by the computer underground. [Exp #163.]

**Art Minds Surf And Sports Photography** http://www.artminds.com Fine ████ photography celebrating the strength, beauty and imagery of the male athletic physique. [Exp #161.]

**ArtCommunion** http://www.artcommunion.com/ The ████ Angeles Contemporary Arts magazine. [Exp #162.]

**Artist Connection** http://www.ezon.com/zanowaski/

online gallery featuring full color photos of subscribed artist's work, bios, and upcoming events. [Exp #161.]

**Black Photographers Virtual Gallery** http://BPC.home.ml.org [Exp. #162.]

**The E-Wall** http://www.geocities.com/SoHo/3672/ A virtual wall on which you are invited to hang a piece of your own ████ work. [Exp #182.]

**Harry's Universe** http://catch22.com/~vudu/ Photography and travel information ████ Belize, Puerto Rico, Virgin Islands, Jamaica, Barbados, Costa Rica, the Dominican Republic, Indonesia, Japan, the Philippines, and more. [Exp. #161.]

**John Francis Peters Art** http://www.hyperweb.com/jfpeters Vibrant, spiritual art with Nature in mind. [Exp #162.]

**Rowena's Page** http://redagnes.la.ca.us/scg/rowena/ Contemporary short stories about a young woman's life By S D Youngren [Exp #162.]

**@rt On The Avenue** http://www.artavenues.com Juried online ████ show featuring a variety of media and new artists every month [Exp #162.]

**Watercolors By Yoju** http://members.aol.com/Art8Yoju Original watercolor by Yoju for the home, office, galleries ████ agents [Exp #161.]

**WildArt Gallery** http://www.wildart.com Where ████ you help save endangered species and make a difference ████ world ████ as buy art that is both inspiring and inspired by wildlife? [Exp #162.]

### ENTERTAINMENT/LEISURE

**Abbeyd's Page** http://www.best.com/~abbeyd Celebrating ████ Beatles, the Byrds ████ Allyn, and 50s-'60s music in ████ [Exp #161.]

**Ancient Future** http://www.acient-future.com/index ████ Audio-enhanced ████ music ████ from inter-

nationally acclaimed group, Ancient Future. Online world rhythm training program. [Exp #161.]

**Antarcticaman's Food, Wine ████ Spirits** http://www.geocities.com/Napa Valley/1971/ Your link to food, wine, and spirit-related ████. [Exp #162.]

**Around The ████████** http://www.warpweb.com/~peg asus8 Save $450 discount travel vouchers, great travel inineraries ████ pictures of exotic places. [Exp #162.]

**Atomic Chasers Rockers And Rollers** http://www.geocities.com/SunsetStrip/5295 Reviews on rock albums, articles, interviews, top singles chart, top 20 hard rock CDs chart, and ████ [Exp. #162.]

**Australian Backpackers Connection** http://www.ozemail.com.au/~austback Backpackers message forwarding service for fax, email, and voice ████ [Exp #161.]

**B.A.D.—Bay Area Dance** http://www.sirius.com/~kwhite/ Auditions, classes, workshops, ethnic dance and more [Exp #163.]

**Bed In Tour—Incoming Tour Operator** http://www.vol.it/bedintour Find ████ the necessary information for an unforgettable trip to Italy [Exp #161.]

**Bile Spitter Cards** http://www.cris.com/~bilespit Twelve different nasty cards to send to the jerks in your life [Exp #162.]

**Bonsai Web** http://www.bonsaiweb.com Devoted to the ████ ████ of bonsai, featuring bonsai critique, a marketplace discussion groups and more. [Exp #162.]

**Butterball Turkey Talk Line** http://www.butterball.com Discover tips on how ████ prepare a picture-perfect Thanksgiving dinner also what's new ████ Butter ████ and more [Exp #161.]

**C&C: Red Alert** http://www.geocities.com/TimesSquare/9780/index.html ████ ████████ site ████ information and links [Exp #162.]

**Campagnola Trattoria Italiana** http://www.madspring.com/~campagnola The menu consists of pasta dishes and main courses filled with hearty flavors [Exp #162.]

**Car ████ ████ ████** http://cartalk.com/ The official site of Car Talk from ████ [Exp #163.]

**Chat Games** ████ http://www.chatgames.com Multi-player hearts game with graphical chat. Play people and robots. [Exp #161.]

**China Voyages** http://www.chinavoyages.com Featuring comprehensive tour information to China. [Exp. #162.]

**CityStuff** http://www.citystuff.com San Jose's guide to food, fun, and stuff. More than just a city guide—each listing is a Web site [Exp #162.]

**Collectable Card Game Auction** http://www.netgate.net/~copa Magic, Star Trek, Star Wars, and many more collectable game cards listed. Hundreds auctioned daily [Exp #162.]

**Cooking For Dummies Home Page** http://www.globalpac.com/unrh&h [Exp #162.]

**Cuisine On-line** ████ http://www.cuisine-online.com A listing of restaurants in the Santa Cruz and Silicon Valley areas. Enhanced listings have menus, pictures, and a map [Exp #162.]

**Cybertown** http://www.cybertown.com Futuristic off-world town with entertainment, information, community interaction and free 3-D VR apartments [Exp #161.]

**████ Zaster, Esq** http://www.globalpac.com The politically correct depraved lawyer broad is working on ruining the GDP [Exp #161.]

**Devin's Chronicles** http://www.devins.com [Exp #162.]

**Divols Internet Golf Tour** http://www.██████ Trip first country wide golf tournament open to everyone [Exp #161.]

# Online Guide

## Web Page Listings *continued*

**ExotiCar Model Company** http://www.exoticarmodel.com Manufacturer of die-cast model cars and automotive accessories for car enthusiasts with retail outlets in Boston and Beverly Hills [Exp #161 ]

**First TV** http://www.first-tv.com/ The first television/video network on Internet [Exp #161 ]

**Food-For-Thought Software** http://www.ffts.com/chtml/ghauser/nyc html Now You're Cooking 4.0 is a versatile cyberkitchen companion for Windows [Exp #162 ]

**The Gathering** http://www.takeme.com Full-length music videos from your favorite alternative bands [Exp #161 ]

**Gerrets Home Page** http://home.earthlink.net/~gerrel/ The epic saga of my struggle with the ravages of Candida You'll laugh You'll cry [Exp #161 ]

**The Good Time Net** http://www.goodtime.net A comprehensive directory of recreational destinations and events in Orange County Free event listings [Exp #162 ]

**HighlandNet** http://www.highlandnet.com Scottish culture tradition Highland Games and entertainment in California and on the West Coast [Exp #161 ]

**Internet Takeout Place** http://www.takeout-info.com/ Restaurant takeout guide by category and location [Exp #161 ]

**Lillymiag Entertainment Network** http://home.earthlink.net/~lillymiag Its entertainment site featuring comedy satire and interactive fiction [Exp #162 ]

**The Literate Traveller** http://www.literatetraveller.com An independent bookseller specializing in travel literature guidebooks, and mysteries set in exotic locales [Exp #163 ]

**Model Air Racing** http://members.tripod.com/~MPR ACE Learn about grand scale air racing on our team's home page [Exp #162 ]

**Monkie's Place Web** http://www.wcc.com/~atl/ A cool place for cool people Online chatrooms and forums [Exp #162 ]

**Movie Ratings By You** http://www.cityboy.com/cityboy/movie Movie database with ratings and comments by movie goers [Exp #161 ]

**Nebulae** http://www.nebulus.com An eclectic nebulus internet band [Exp #161 ]

**OnVideo** http://www.cyberpod.com/cyberpod/onvideo.htm A complete home video guide with current and forthcoming movies released on tape [Exp #163 ]

**The Outdoor Show** http://www.thecircle.com/gwout-doorshow/ Great Western Sports, RV, and Travel Show [Exp #162 ]

**Paris Guide** http://www.geocities.com/Paris/3554 Travel Information for tourists and businessmen, including historic sights, entertainment, and weather [Exp #161 ]

**Pavel Bure Fan Club** http://www.vcn.bc.ca/pbfc The official fan club for National Hockey League and Vancouver Canucks right winger, Pavel Bure. [Exp #162 ]

**QUICKcheck** http://users.aol.com/jwag777/quick/index.html Quickly check how movie critics from fifteen major newspapers and magazines rate today's movies [Exp #163 ]

**The R&B Page** http://www.rbpage.com Featuring music and interviews with popular via RealAudio 30 Upcoming Howard Hewett Bobby Womack [Exp #162 ]

**RailTech Software Systems** http://ourworld.compuserve.com/homepages/railsoft Anything and everything you wanted to know about railroads with links to all railroad sites [Exp #162 ]

**Slam And Scream Office Stories Page** http://www.io.com/~slam/ New site for administrative and other office secretaries and other office "underlings" [Exp #163 ]

**The Sleeping Princess** http://www.well.com/ or/ Or the effects of mass hysterical amnesia on the female psyche a Woody Allenish comedy

site [Exp #163 ]

**Smirnoll Pure Thrill Heat** http://www.purethrill.com [Exp #161 ]

**Snowchasers Ski Club** http://www.jaws.com/sso/clubs/snowchasersindex.html A year round ski and social club serving Dublin San Ramon Valley [Exp #161 ]

**SP Presents** http://www.netwizards.net/~lmevents/home.htm Affordable software games for Windows 3.1, 95, and NT Additional gameplay [Exp #162 ]

**The Spearfishing Page** http://www.cris.com/~secret Covering spearfishing in Southern California. Info on fish, spearguns, tactics clubs, and related topics [Exp #162 ]

**Stepher J. Hemenway's Slouch In The Couch Home Page** http://pages.prodigy.com/slouch/home.htm Based on the Slouch in the Couch series of children's learning books for ages 4-11 [Exp #161 ]

**Taylor Golf** http://www.taylormadegolf.com The site includes a variety of information on both the education and enjoyment of golf as well as Taylor Made's products and partners [Exp #161 ]

**The Torpedoes Red Surf Music** http://www.surfbase.com/torpedoes Home page for it's high intensity surf band—photos show schedule CD info and news [Exp #162 ]

**University Toplinks** http://www.university-toplinks.com/ Content and linked sites related to college students—their life interests and tastes [Exp #161 ]

**Vinyl Vendors** http://www.vinylvendors.com LA based company dealing in rare and collectible records [Exp #161 ]

**Weekly Planet** http://www.weeklyplanet.com The planet The global community live weekly that defines your "think" to news and entertainment on the internet [Exp #161 ]

**World Wide Discount Travel Club** http://www.worldwidediscounttravel.com [Exp #161 ]

# Zone Doubt

## Graphix Zone Jazzes It Up
## With Herbie Hancock

This column has said harsh things ▪ the past about a couple of Graphix Zone musical CD-ROM titles, *Prince (or The Artist Formerly Known As or Whatever His Royal Purpleness Pleases) Interactive* and *Bob Dylan: Highway 61 Interactive*. The principal problem with both those titles was the endlessly tedious navigating necessary to get anywhere, ▪ problem shared by many other titles that have let the hype about exploring virtual environments overwhelm the common-sense needs of telling a story ▪ imparting information.

While *Herbie Hancock Presents Living Jazz*, one of a slew of new Graphix Zone titles, does not entirely escape from the dreaded mousing-around-a-fake-environment metaphor, it has several significant design improvements that, together with its excellent content, breathe new life into the whole musical CD-ROM concept. Certainly, the CD-ROM reminds ▬▬ again that the Web is, at this time, entirely inadequate for any large-scale, serious multimedia applications employing sound and video.

If there's a market out there for interactive media-rich treatments of cultural history (as opposed to simply telling the story via old-fashioned linear video ▬ a coffee-table book), the only currently practical way to serve it up is on CD-ROM—whatever the hullabaloo about DVD, the Web, or whatever. Everything else is either ▬ the future or technically and/or commercially not up ▬ the task; obviously the Web ▪ good for something, but it ain't this.

*Herbie Hancock Presents Living Jazz*, ▬▬ with its flaws, deserves to find a market today ▪ kept me mousing around for ▬ longer than most CD-ROMs—not because I was annoyed with it and wanted to figure out why, which ▬ often the case, but because it intrigued me with ▬ content, and because it mostly succeeds in its goal of linking the early days of jazz with its contemporary practitioners, telling the story of jazz's journey from the streets and brothels of turn-of-the-century New Orleans, through migration to northern cities and several stylistic convolutions to its present status as perhaps the world's preeminent musical form.

It's not the complete story—how could such a massive undertaking fit ▬ ▬ disc?—there are obviously gaps and incomplete areas, but ▪ reasonably captures Hancock's take ▬ the essential history and achievements of jazz and the attitudes behind it. It presents much historical performance footage, along with reminiscences and theorizing from many musicians. Although Hancock is obviously ▬ important figure in both jazz history and this CD-ROM, his role is not unduly emphasized; in fact, although a portion ▬ the CD-ROM deals with ▪ jam session of his New Standard Band, there's ▬ attractive modesty and awareness of his role ▬ only ▪ part of ▪ much larger tapestry. This ▬ by ▬ ▬ autobiographical disc

# MultiMedia & BEYOND

## THE STORYVILLE STORY

Storyville was the red-light district of New Orleans where jazz first emerged from the mating of African musical forms with those of Europe, a process that has also produced other new musical forms ▪ other parts of the world.

Appropriately enough, it's also the main environmental metaphor in *Living Jazz*. The scheme is the usual one of exploring the virtual environment to find hot spots that, when clicked on, trigger ▪ video, a voiceover, a blow-up, or a link. However, *Living Jazz* has several improvements in the way that navigation and interactivity are handled that combine to make the experience considerably more satisfying than previously.

> **W**hile Herbie Hancock Presents Living Jazz does not entirely escape from the dreaded mousing-around-a-fake-environment metaphor, it has several significant design improvements that, together with its excellent content, breathe new life into the whole musical CD-ROM concept.

On the main screen, you can scroll through a miniature version of Storyville with right and left directionals When you see a building ▪ interest, rolling over it will cause the text above and below to indicate where you will go. That's right—the text above and below. The interface is being used to point toward two different areas of the disc simultaneously; you select precisely where to go from the text itself.

The text above will take you to a section called New Jazz Horizons, with a jam session of Hancock's New Standard Band, plus interview segments with various musicians, mostly dealing with the jazz attitude and aesthetics. If entering this area directly, you'll experience it as a series of interactive paintings with hot

spots. However, the miniature scrolling Storyville allows you to enter any particular painting individually.

The text below the miniature works in a similar fashion, but takes you to individual buildings within Storyville, where the more historical material is. Some of the hot spots within Storyville will lead you on to other cities and other times. What's useful about the ▪▪▪ below the miniature is that all these places and times also appear below the Storyville location in ▪ submenu and ▪▪▪ then be directly entered. The use of the scrolling miniature allows much faster zipping around from one end of Storyville to the other, while the text menus and submenus allow you to get into the ▪▪▪

with real media much faster, and to know where you're going.

Unfortunately the scrolling method doesn't work within the environment itself or the paintings, and you're stuck with the old-fashioned frames replacing each other ▪▪ you move about. However, a significant improvement for perhaps a cheat! ▪▪ having to mouse around to find the hot spots ▪ that you have the option, within each frame, of highlighting all ▪▪ hot spots ▪▪ you know where to click without having to do all that wrist exercise

There's also ▪▪ index of sorts—it's ▪▪▪▪ the Gallery—that allows you ▪▪ select, from a menu outside the environmental context, the ▪▪▪ clips ▪▪▪ interviews. The only problem with this is that some of the clips ▪▪ categorized in difficult-to-find ways. For example, when I wanted to take another look at a particular

interview with Mickey Hart, I eventually only found it again by serendipity. It's too bad because what separates a good reference tool from a toy is often the quality of the indexing. In the case of *Living Jazz*, a relatively small investment of ▪▪▪▪ and thought would have made for a much stronger index, and thus a much more useful product.

## THE DOWN BEAT

Why was I ▪▪ intent ▪▪▪ looking at that interview clip with Mickey Hart again? On my first listen, I thought I caught that he'd been edited when he referred to the "'f-word-ing' universe"—but I wasn't sure.

One feature that *Living Jazz* does not have within Storyville is the standard QuickTime set of controls for each video or audio clip. There's ▪▪ fast forward, rewind or pause, just a stop when ▪▪ click.

"Okay," you might say. "No big deal. It's just a short clip. I'll watch it again from the beginning." But it's not so easy—that particular clip could only be watched the one time within Storyville. At the end of it, ▪ if you stopped it in the middle, ▪▪▪ ▪▪ not have the choice ▪ immediately play ▪ again, as ▪▪▪ might expect within the standard multimedia product.

What you are offered instead in this ▪▪▪▪ is what *Living Jazz* calls an Art Link, which is ▪▪▪ of those hyperlinks to another city and time—perhaps a nightclub, perhaps a street ▪▪▪ in New York ▪▪ Chicago or Los Angeles. At least, ▪▪▪ design is competent enough to flash a little message ▪▪ ▪▪▪ bottom ▪▪ the screen ▪▪ ▪▪▪▪ that you'll be leaving Storyville and you have the choice not ▪▪ go—but you don't have the choice ▪▪ rerun the originating clip.

So rather ▪▪▪ quitting to reenter Storyville afresh, I remembered that ▪▪ the index, you do get the ▪▪▪▪▪▪ controls for the clips—and, ▪▪▪▪ I ▪▪▪ pretty sure I'd ▪▪▪▪ to run the questionable part in ▪▪▪▪ a couple of times to see whether Mr. ▪▪▪▪ had indeed uttered any apparently objec▪▪▪▪▪▪ words, that's where I headed for.

# MultiMedia & BEYOND

## MULTIMEDIA 101 continued...

In the clip Hart is basically talking about the vibratory qualities of the universe as they pertain to rhythm. So one might expect to look under his name in several other logical places, the "universe" for one. Where you'll actually find the clip is in a submenu under the words, "New Orleans." Definitely not intuitive.

But now we get to the real problem—which is that, after listening and looking at the clip several times, I'm pretty sure (like 99% certain) that he did utter the dreaded word and was then ineptly edited. Besides the fact that in context the word is actually right, not used as a curse word, there's a curious discontinuity between being in this virtual environment that includes a brothel (and we get to go into the girls' rooms, see pictures of them, and hear about the whole business) as well as stories of mayhem and violence (go to the cemetery for those) and the namby-pamby prudery of cutting out the common word for the activities that those whores and their johns were actually engaged in. Jazz is basically an adult world, it seems counterproductive to pander to those easily offended by sexual references.

Besides this issue of editorial integrity—or, to be kinder, discretion—there's the problem of sloppy production editing. Unfortunately, a number of clips in Living Jazz suffer lost beginnings and abrupt endings. It's not an uncommon problem in other titles, undoubtedly brought about by a combination of rushed schedules and hard-to-use tools followed by sloppy testing and settling for low standards. Despite the deplorable technical quality of much media today, I still find it hard to believe that the paying public will accept such slipshod work in multimedia titles on an ongoing basis. And, let's face it, with some evidence that they won't accept CD-ROM titles at all, it makes sense to improve your odds and give them the best product possible.

One other small problem with Living Jazz is that things are not always consistent within some of the Art Link environments, those clubs and cities and times other than Storyville. In one place, the Lighthouse in Hermosa Beach, an important club in the early to mid '50s, there was sometimes a spoken introduction to let you know why the place was significant, and some-

### N. B. & P. S.

REALLY GONZO READERS MIGHT BE interested to know that Graphix Zone has also released a CD-ROM title on Willie Nelson, including four previously unreleased recordings, and a CD-ROM, Under the Covers, that "provides hours of exploration into the life and times of the artist behind some of the greatest album covers in rock 'n' roll history." (!!!!!!) Or perhaps not

Really, really gonzo readers will be undoubtedly interested to know that Graphix Zone is also distributing an absolutely boffo, addictive, silly but for some reason rather fun CD-ROM game, Power Rangers Zeo Versus the Machine Empire. It would be hard to say anything intelligent about this product, but it comes recommended for several semi-enjoyable hours of utterly idiotic time-wasting, and you get to save the human race from domination by machines. The notion that this game is played on a machine that is rapidly over-dominating the human race in at least this sector of the universe is quite utterly irrelevant.
—d

# MultiMedia & BEYOND

## MULTIMEDIA 101 *continued*

times you were just left to wander around. Maybe the scheme is that the first time you enter you get the intro (there's some evidence for this from other places with inconsistencies) but not subsequently. Given that it just takes a click to stop the voiceover, I think I'd rather have all the info all the time as the default.

Beyond these issues, *Living Jazz* has a mixed bag of the usual draw-backs of CD-ROMs. It's slow on a 2x CD-ROM drive, although there's also a version for 4x drives. A lot of the graphics are grainy and pixelated, as is so typical of hybrid CD-ROMs. The sound is sometimes hissy or quantized.

The online link, despite the PR sheet that claims that it "seamlessly links to a Web site where users can download interviews with various jazz greats" required me to manually dial my ISP, then all I got to was a so-so page, albeit with a fair number of links to other sites. I mean, "Who cares? Why should I be impressed?" Any clown can launch their browser, do a search, or go to *http://www.gzone.com/livingjazz* ; it isn't rocket science, although, ha-ha, I note that that URL isn't anywhere in the sleeve notes.

I know a lot of graphic designers who'll sneer at the graphics, in particular the interactive paintings, but I thought they were OK. The cursor, which is a cute little musical note that points up or down depending on whether it's over a hot spot, often gets lost against the background. You know, all those niggling buggy and common little things that take the edge off the enjoyment and make you wonder if the CD-ROM publisher thought the issues through, tried various designs, fixed some obvious problems—or just rushed the product out the door, perhaps believing their own hype and not being up-to-date on the dire state of much of the CD-ROM business.

## JAZZ LIVES

OK, I know I sound like I'm being harsh again on the long-suffering Graphix Zone—so let me restate that *Herbie Hancock Presents Living Jazz* is a worthwhile CD-ROM despite its flaws.

These issues are raised so that both the paying public and other developers can gain some insight into the problems involved in putting together a large project in a business where just about everything you figured out at the beginning has a better solution by the end, where the distribution channels are murky, where the design conventions are unclear, and where the mass audience is uncertain about what this multimedia thing is really all about, having been subjected to an avalanche of hype but not having experienced much of any real value.

*Herbie Hancock Presents Living Jazz* has some real value. I really enjoyed being able to see so many historically important jazz performers doing their thing, sometimes in specific historically important performances. The more people hear musicians talking intelligently and articulately about their art, craft, skills, and culture, the better. ■

Copyright © 1997 by Jonathan All rights reserved.

# Sophia Antipolis— Startups And Successes

**Continuing Last Month's Report On Technology And Multimedia In France**

BY TONY REVEAUX

A s we said last month, Sophia Antipolis, located near Nice and Cannes, is the nucleus of France's research and development in electronics, computer science, telecommunications, healthcare, biotech and multimedia.

The chances of success for French developers are ▪ better or worse than ours in Silicon Gulch ▪ Santa Monica. It can just take longer to happen. While there certainly is venture capital in France, it isn't as plentiful nor as swift as it is in California, where decisions can be made

actions taken and money in the bank almost overnight

Alongside the titans of telecom, aerospace and biotech, most of the companies here are relatively small. Once they survive and hit the growth surge, some may launch off on their own to build a company. That may mean returning to the region of France they came from, but many settle not far from Sophia Antipolis—just as Silicon Valley's talent pool is enriched by all the Stanford and U C Berkeley grads that stay around

# MultiMedia & BEYOND

## DEVELOPER ASSOCIATION: MITSA

MITSA (The Association of Multimedia Interactivity and Teleactivity of Sophia Antipolis) serves developers and producers much like the Multimedia Development Group in San Francisco. MITSA collects and circulates multimedia information, ideas and resources, and is also intended to be a permanent meeting place.

The club is organized in commissions, like SIGs, each devoted to a different topic (Internet, health, ATM, etc.). MITSA currently boasts one hundred members and publishes a regular newsletter *(www cyber mag.com).* Other projects include the creation, in close cooperation with IMeT (The Mediterranean Institute for On-Line Activities), of a resource center to support multimedia enterprises by small businesses.

The MITSA meeting I attended was held at the Mediathel Hotel, one of several hotels that dot the Sophia Antipolis campus, each with a restaurant that would stand out as one of the best were it located in Silicon Valley. Decorated in a teal and hot dusky rose semi-Deco, it has the warm and easy going elegance of the Riviera style. The dining room framed a kilometer-long buffet that gave new meaning to the term "menu driven."

After the luncheon, proceedings moved downstairs. At ground level the low-ceilinged space was neatly divided in dozens of small booths where members displayed and demonstrated their products and services. This monthly micro-trade show enables clients, visitors and other members to interact face-to-face.

One example of a MITSA member-exhibitor was Questel-Orbit, Inc. Another example of the ongoing French-US technology connections, Questel produces QPAT-US, an Internet based full-text US patent database, with patent data for over twenty years. Other members included

# MultiMedia & BEYOND

## Sophia Antipolis continued from page 194

In Communication, which does interactive multimedia training, and Euromedia Formation, which provides teletraining.

### CICA: CATALYZING DEVELOPMENT

There may be nascent French Wozniaks and Packards cooking it up in some of those quaint n' crumbly tile-roofed brick garages spotted around the more ancient parts of the towns, but the local government isn't content to wait around for that to happen.

One of the most active areas on the Sophia Antipolis campus is the Centre International de Communications Avancée (C.I.C.A.). CICA is one of the agencies that tries to provide the glue, the grease, the grapevine, the fertilizer, the networking—all of those intangibles that can help an international group function better as a community.

CICA's main structure is a centralized facility for meetings, presentations, conferences, data processing and multimedia services and communications logistics as well as a place for showcasing technology. It acts as a facilitator for many companies large and small who want to locate in Sophia Antipolis. In parts of this center and in other buildings CICA provides facilities

and incubator support for small startups.

Its theaters and galleries provide cultural resources and activities for the whole community. When I was there, the visiting artist was Ultra Violet, one of the lesser wavelengths of the fabled Andy Warhol factory era. She delivered a series of lectures while the main gallery featured her earnestly derivative '60s-ish sculptures. I guess Jerry Lewis was already booked.

### LOCALIZATION

Place Sophie Laffitte is a modest two-story quad nestled into the Mediterranean scrub forest. It looks like it could be a college art department with its welcoming sculptural mural, a collage of artifacts collected during construction. The ambience of this scene reinforces the resemblance of Sophia Antipolis to the UC Santa Cruz campus.

## Sophia Antipolis continued

Up the stairs to "le premier etage" (second floor to us), the office of Sophia Localization Multimedia (SLM) is about half the size of Larry Ellison's walk-in closet. Not all the paintings have been hung on the walls, and wires stretch between machines. This is a busy node of a complex international production network that exists in several time zones simultaneously.

"My company, SLM, is only the tip of the iceberg of a larger group, ELG," says Jean-François Champollion, General Manager, formerly Manager of Localization Services at Digital Equipment Corp.

The European Localization Group (ELG) was founded in 1995 by a French Company (SRC) and an Italian company (Binari Sonori). Rapidly, members joined from Spain, the UK and Germany. It is not a company per se, but rather a banner grouping companies who cater to the same customers. It was formed to meet the needs of internationally-minded customers producing off- and online information, from games to CD-ROMs and Web sites using a single turnkey point of contact for their localization needs.

"SLM is a de facto member of ELG through our partners Eagle River Interactive (US) and SRC Localization (Paris)," explains Champollion. "We did not get any help from government or local authorities, only a 'label' from the French Ministry of Telecommunications in response to the need for companies able to deal with the emerging superhighway market."

He quickly patched together enough Macintosh components to run a beta of their current CD-ROM localization project for the French market, "Chuck Jones' Peter & The Wolf" from Warner Interactive. Other projects have included Access/U.S. Gold's "Under a Killing Moon," Broderbund's "Harry and the Haunted House," GT Interactive's "Doom II," Sierra On-Line's "King's Quest VII," The Voyager Company's "Making Music" and Sony Interactive Europe's "Myst."

I asked Champollion why I wasn't seeing more French titles localized for the US. "We have developed properties here," he replied, "but they wouldn't be understood or appreciated in France." This is consistent with the international distribution patterns for comics, film and television. For better or for worse, the US reigns as the king of content, and

American English as the lingua-non-franca for technology and business.

Netscape has chosen ELG to translate its press releases. The point of contact is SRC Localization in Paris, which distributes the work to the various companies to get them translated to German, French, Italian and Spanish. "We use ISDN and email to transfer HTML files," says Champollion. "Typically, press releases must be written at once for international market exposure. Files are written in the US during the day and sent to Paris in the evening. With the time differences we are able to translate around the clock so that the US gets their files the next morning and can put them live on the Netscape server."

> For better or for worse, the US reigns as the king of content, and American English as the lingua-non-franca for technology and business.

## CD-ROMS FOR INDUSTRY AND ART

From Cagnes Sur Mer, just below Sophia Antipolis and between Antibes and Nice, Danimage Multimedia has produced seven CD-ROM titles. Patrick Wetterwald, the young director, started his multimedia production company with neither venture capital nor government funding.

After working for IBM France's development laboratory in La Gaude for ten years, he took advantage of a kind of very early retirement package—more generous than most in the US. With this "bronze parachute," Wetterwald has devoted his assets and energies to producing multimedia. He has managed to maintain this momentum without accepting any investment partners.

Like many small developers in the US, he adds on the talent needed for each project and for that time, rather than maintaining a full time crew. His "local partners" include a video

studio, a communication agency, an education center, an illustrator and networking facilitator. Danimage is active in MITSA and participates in the MILIA multimedia trade show in Cannes.

Polygram distributes his foreign language education titles such as "Multimedia Teacher 1 & 2" and "Multimedia Lehrer 1 & 2." An ambitious and successful release is "A.T.M et les Autoroutes de l'Information" ("A.T.M and the Information Superhighways") In French and English for Windows, it is dedicated to information and education on ATM technology and high-speed networks.

Distributed by Eyrolles and Videolion in Europe, this work is also an example of the close relationships and spinnings-off from the corporate giants of Sophia Antipolis and smaller developers. France Telecom helped sponsor this project because of its enormous commitment to ATM. France Telecom (the world's fourth largest telecommunications operator), has installed a 155 Mbit/s ATM network at Sophia Antipolis.

"A.T.M and the Information Superhighways" uses photos, videos, graphic animation and voice to clarify this otherwise somewhat abstract concept. It also includes demo tests and a three-day course structure to aid in learning about ATM.

When Wetterwald told me he'd sold 1,000 copies of the ATM CD-ROM in Sweden alone, I asked how he had managed to do that without localizing to Swedish. "It doesn't matter, as long as it is in English," he replied. "English is understood everywhere."

Days later, when I was visiting the Picasso Museum in nearby Antibes, I had the great pleasure to encounter Danimage's most culturally creative release in action. There in the Museum Shop was a PC running their "1946, The Art of Reconstruction." Priced at 190 francs (about $40), this Mac/PC, French/English CD-ROM does a wonderful job of presenting depth and background to the Museum's world class block-buster exposition of modern art.

## INTERNET À LA CARTE

A native Niçois, Jean-Gabriel Cabanas is a UCLA

> "Ten years ago," explains Cabanas, "I would have automatically
> gone to Paris after high school.
> But because of Sophia Antipolis, I could stay here and go to the
> University of Nice and obtain the technical degree."

fellow who is one of a growing number of French Internet service providers. His Alcyonis company ■ ■ one of the CICA cubbyhole offices. I've seen larger router cabinets, but it is sufficient to contain Cabanas, boxes of stuff, a couple of other partners, and various techies who work on and off according to demand.

"Ten years ago," explains Cabanas, "I would have automatically gone to Paris after high school. But because of Sophia Antipolis, I could stay here and go to the University of Nice and obtain the technical degree."

Alcyonis uses P133 Pentium boxes with Fast-SCSI disks, Cyclades boards ("Very efficient and cost effective, good support," according to Cabanas) for user access, and Linux for the operating system.

"With only one hundred subscribers at this time—eighty individuals and twenty corporates—we're happy to have some Web hosting, and mainly intranet consulting to improve our monthly income."

"In Paris," continues Cabanas, "there are all these so-called ISPs offering the Internet for 90 francs (less than $20). So when you want to provide quality service, and not these skimpy deals, then its really hard for us, because then customers think that they can get everything for 90 francs. But, our number of subscribers is growing fast (ten people a week), so I hope that Internet access will pay my leased line with Monaco Teleport and the 'huge rent' of my office."

Email just in from Jean-Francois Champollion reports that he has spun off his office fifteen minutes away from Sophia Antipolis ■ the ancient seaside town of Antibes.

## RESOURCES

**SAEM Sophia Antipolis**
Cote D'Azur, Place Joseph Bermond
BP 33-06901
Sophia Antipolis CEDEX FRANCE
sophia@saem-sophia-antipolis.fr
URL: http://www.saem-sophia-antipolis.fr

**Cole d'Azur Development**
URL: http://www.cad.fr/

**Beyond the French Riviera**
URL: http://www.beyond.fr/beIndex.html

**MILIA**
URL: http://www.reedmidem.milia.com

**Questel-Orbit, Inc.**
URL: http://www//www.qpat.com/

**Sophia Localisation Multimedia**
100632.3300@compuserve.com
URL: http://ourworld.compuserve.com:80/
homepages/sophia_localisation_multimedia

**Danimage Multimedia**
100665.1411@compuserve.com

**Alcyonis**
alcyonis@cica.fr

**Bay Press**
115 West Denny Way
Seattle, WA 98119-4205
(206)284-5913
Bay Press@aol.com

**Coriolis Group Books**
7339 E. Acoma Dr., Ste. 7
Scottsdale, AZ 85260
(602)483-0192
URL: http://www.coriolis.com

## MEANWHILE, BACK IN THE USA: NEW BOOKSHELF ADDITIONS

Editor Lynne Hershman Leeson was the first artist to make a laser disc piece, and has been experimenting in intermedia since the early 1980s. In *Clicking In: Hot Links to a Digital Culture* (Bay Press, 371 pp + CD-ROM, $24.95), she has compiled an anthology of current thought and commentary ■■ what it may or may not mean to be wired, plugged, or indeed clicked in to all the cybertectonic shifts and digital changes that rock our boats of consciousness today.

We hear from voices such as John Perry Barlow, David A. Ross, Sherry Turkle, Jaron Lanier, Sheldon Renan, R.U. Sirius, and Sandy Stone on topics such as censorship and veracity, gender identities and roles, perception, community and privacy and interactive art. The CD-ROM contains some of Leeson's art and material that is suggested by these issues.

If you want your site to twist and shout, *Web Developer's Guide to Sound and Music* by Anthony Helmstetter and Ron Simpson (Coriolis Group Books, 326 pp + CD-ROM, $39.99) will provide a good jumpstart. They tell you about audio capture, creation, prep, the recording process, hardware, software, sound libraries ■■ ■■ to licensing and contracts and interfacing with the Internet. Everything is laid ■■ logically and clearly for the Windows user, with big screen shots and lots of links. The CD-ROM is a trove of clips, effects, scores utilities, demos and tutorials. ■

# Engineering and Information Technologies Programs

## UCI EXTENSION • UNIVERSITY OF CALIFORNIA, IRVINE
### SPRING 1997

**ENROLL NOW (714) 824-5414**

Check out our new Internet site on the World Wide Web at http://www.unex.uci.edu/~unex

SP97 21-040

---

# Solutions

IN THE LATTER HALF OF THE 1990S, THE GENUINELY FRUSTRATING THING ABOUT DISCOVERING THAT A LANGUAGE YOU USE HAS A GOTO STATEMENT IS TRYING TO FIGURE OUT HOW THIS STATEMENT IS TO BE USED. "GOTO", WHICH WAS ONCE NECESSITY, IS NOW SOMETHING OF AN HISTORICAL CURIOSITY.

times, for the other shoe to drop and for history to repeat itself. Perhaps goto will come back into fashion.

## The Adventure Continues

Consequently, just for the sake of experimentation, when I logged in yesterday the first thing I typed was a label. I worked all day, and just before I went home I issued a command to go to the label that had started the session.

The entire day's work tried to replay itself. Exactly the same commands were issued in exactly the same order, but of course things were now quite different. Files and directories had been created and removed, environment variables had changed.

With a shock I realized that the working directory from which I started the replay was different from the working directory at the start of the day, and there was some possibility that replaying an "rm -r" command from a different directory could wipe out work that I desperately needed to keep.

In a panic, I typed control-C to interrupt the replay, only to find that it interrupted the individual commands but left the replay intact. Mercifully the replay came to rest in a vi editing session that could be suspended (control-Z) to interrupt the replay.

Sometimes the only way to learn something new is to repeat the past, and only those who were ignorant of history in the first place would think of it as doom. ∎

# Solutions

## Small Office/Home Office

with separate, carefully-enunciated words, I can now tell you. He was talking to the Dragon.

Once DragonDictate has separate words to work with, its ability to recognize them is frequently amazing. Right out of the box it understands the careful speech of most American speakers. It only asks you to tell it if the voice it will be hearing is high or low, and to train it very briefly by speaking under twenty words. If you wish to get higher recognition, you can train it to understand your speech much more reliably by spending twenty minutes pronouncing about four hundred words for it. As you read each word to the program, it revises its internal model of the way you speak, and keeps the information in a separate file for each user.

It has several layers of correction available. As you dictate each word, a drop-down box shows DragonDictate's best guess of what the word is. That word will also appear in the document. If the Dragon has mis-guessed, however, you can choose any of the other words in the box by speaking "Choose 5" or "Choose 6," using the number of the line the word is on. If the correct word is not there, you can say "Spellmode" and spell the word using the Alpha-Bravo alphabet. So "Dragon" would be "Delta-Romeo-Alpha-Golf-Oscar-November." As you spell the word, DragonDictate is constantly guessing what might be the word you are after, and placing its guesses in the dropdown box. When the right word appears in, say, position 4, you can say "choose 4" or complete the spelling as you wish. Your correction will go into the learning file, and DragonDictate will recognize the word better the next time it hears it from you.

You can also correct earlier mistakes by saying "Oops." The last dozen or so words in the document will then appear in a special correction panel. You can choose which one to amend, and change it just as if it were the last word you used. The "Oops" function did not always successfully replace words in MS Word while I was trying to dictate this column, for no reason I can detect. Perhaps the Dragon was as frustrated as I was with our hardware problems.

DragonDictate is available in a general edition, which works for most Windows applications, in enhanced editions with additional vocabulary, and in smaller "singles" editions that work only for one application like MS Word. If your soundboard-microphone combination works well, I bet this is just a dandy program. ■

## RESOURCES:

**PKZip for Windows** $49
PKWare, Inc
http://www.pkware.com
(414)354-8699

**DragonDictate**
**Single Application Edition:** $99
The following are all general purpose versions. The larger prices mean larger vocabularies.
Personal Edition (10,000 words active), $395. Classic Edition (30,000 words active), $695.
Power Edition (60,000 words active). Special vocabularies are also available.
Dragon Systems
1-800-825-5897
http://www.dragonsys.com

# Resources

## Calendar Of Events

### Conferences, Shows, Special Events

#### February

**February 1 Computer Marketplace.** Sherman Square Entertainment Center, Reseda. National Productions. Contact: 1-800-800-5600.

**February 1–2 Computer Super Shows.** The Chatsworth Marketplace. Super Show Productions. Contact: (714)459-6105.

**February 2 Computer Marketplace.** Sequoia Conference Center, Buena Park. National Productions. Contact: 1-800-800-5600.

**February 3–6 ComNet Conference and Expo.** Washington, D.C. Contact: 1-800-545-EXPO or URL: http://www.mha.com/comnet/.

**February 7 The Internet: What's Fact, What's Fancy.** Los Angeles. UCLA and Software Council of Southern California. Contact: (310)996-0545.

**February 8–9 Computer Marketplace.** Fairplex Expo Center, Pomona. National Productions. Contact: 1-800-800-5600.

**February 9–11 The Home Automation Show and Conference.** Orlando, FL. Contact: 1-888-RUN-TABS, info@homeautomation.com, or URL: http://www.homeautomation.com.

**February 9–12 Demo '97.** Indian Wells, CA. Contact: 1-800-633-4312.

**February 12–14 Professional/Scholarly Publishing Division's '97 Annual Conference.** Washington, D.C. Association of American Publishers, Inc. Contact: (212)255-0200

**February 15 Computer Super Shows.** Glendale Civic Auditorium. Super Show Productions. Contact: (714)459-6105.

**February 16 Computer Super Shows.** Riverside Convention Center. Super Show Productions. Contact: (714)459-6105.

**February 18 CD-R Technology Seminar.** Los Angeles. JVC and ▇▇▇▇ Storage, Inc. Contact: 1-

214 MICROTIMES • ▇▇ ▇▇ ▇ 1997

## FEBRUARY 8–9

### Computer Marketplace
#### POMONA

Produced by National Productions, Inc., for over thirteen years, Computer Marketplace covers 100,000 square feet with over 300 exhibits featuring multimedia systems, notebook computers, software titles, modems, and other peripherals at discount pricing. Open 10-5 pm, admission $8. For more information, call 1-800-800-5600, or URL: http://www.computermarketplace.com.

## FEBRUARY 7

### The Internet: What's Fact, What's Fancy
#### LOS ANGELES

New media business models that are working will be explored by senior executives from major internet-related enterprises at the The Internet: What's Fact, What's Fancy, hosted by UCLA and Software Council of Southern California. Topics will range from a current demographic description of who internet users actually are and the profile accepted by advertisers to ▇ state-of-the-industry discussion about online electronic commerce. Also, panelists will examine how online media are used successfully to update packaged software and profit strategies driving product development and service offerings. Speakers will include senior management from Disney Online, Times-Mirror, Microsoft, Western International Media, Netcount, InfoTouch, SAIC, Sony Computer Entertainment, Bandai Digital Entertainment, Netscape, Ziff-Davis, Travelocity, AudioNet, Pacific Bell Internet Services and Ogilvy Adams & Rinehart. For more information, contact (310)996-0414

888-479-0100, ext. 179 or URL: http://www.smartstorage.com.

**February 22–23 Computer Marketplace.** Fairplex Expo Center, Pomona. National Productions. Contact: 1-800-800-5600.

**February 22–23 Computer Super Shows.** O.C. County Fairgrounds. Super Show Productions. Contact: (714)459-6105.

**February 27–March 1 Sunbelt Computer & Graphics 1997.** Atlanta, GA. Contact: 1-800-330-7491 or URL: http://www.sunbeltshow.org.

#### March

**March 1 Computer Marketplace.** Sherman Square Entertainment Center, Reseda. National Productions. Contact: 1-800-800-5600.

**March 1–2 Computer Super Shows.** The Chatsworth Marketplace. Super Show Productions. Contact: (714)459-6105.

**March 2 Computer Marketplace.** Sequoia Conference Center, Buena Park. National Productions. Contact: 1-800-800-5600.

**March 2–6 Object World East.** Boston, MA. Contact: (617)433-1830, ▇ URL: http://www.ow.com.

**March 8–11 1997 SXSW Multimedia/Interactive Festival.** Austin, TX. Contact: sxsw@sxsw.com. ▇ URL: http://www.sxsw.com.

**March 8–9 Computer Marketplace.** Henderson Convention Center, Las Vegas. National Productions. Contact: 1-800-800-5600.

**March 8–9 Computer Super Shows.** Glendale Civic Auditorium. Super Show Productions. Contact: (714)459-6105.

**March 10–14 Fourth Annual Internet World '97.** Los Angeles. Contact: 1-800-632-5537. or URL: http://events.iworld.com.

**March 15–16 Computer Marketplace.** Fairplex Expo Center, Pomona. National Productions. Contact: 1-800-800-5600.

**March 18–20 Internet And Electronic Commerce Conference And Expo.** New York, NY. Contact: (203)256-4700, iec@expocon.com, or URL: http://www.expocon.com/iec

# Resources

March 18–22 Technology and Persons with Disabilities. Los Angeles. Center ▪ Disabilities. California State University, Northridge. Contact: (818)677-2578. *LTM@CSUN.EDU* , or URL: *http://www.csun.edu/cod*

March 22 Computer Marketplace. Earl Warren Showgrounds, Santa Barbara. National Productions. Contact: 1-800-800-5600

March 22–23 Computer Super Shows. O.C. County Fairgrounds. Super Show Productions. Contact: (714)459-6105.

March 23 ACP Computer Swap Meet. Santa Ana. Super Show Productions. Contact: (714) 558-8813

March 25–27 Communication Design Engineering Conference. Washington, D.C. Contact: (617)021-9219, or *cdec@exporeg.com* .

March 29–30 Computer Super Shows. Riverside Convention Center. Super Show Productions. Contact: (714)459-6105.

## April

April 5 Computer Marketplace. Sherman Square Entertainment Center, Reseda. National Productions. Contact: 1-800-800-5600

April ▪ Computer Marketplace. Sequoia Conference Center, Buena Park. National Productions. Contact: 1-800-800-5600

April 8–10 American Programmer Summit '97. Boston, MA. Contact: 1-800-888-1816, *lover-img@cutter.com*, or URL: *http://www.cutter.com*

April 9–11 Folio:West. Los Angeles. Contact: (310)318-9697

April 12–13 Computer Marketplace. Henderson Convention Center. Las Vegas. National Productions. Contact: 1-800-800-5600

April 19–20 Computer Marketplace. Fairplex Expo Center, Pomona. National Productions. Contact: 1-800-800-5600

## May

May 3 Computer Marketplace. Sherman Square Entertainment Center, Reseda. National Productions. Contact: 1-800-800-5600

May ▪ Computer Marketplace. Sequoia Conference Center, Buena Park. National Productions. Contact: 1-800-800-5600

May 6–8 On Demand Digital Printing and Publishing Conference. New York. Contact: 203 256 ▪▪▪▪ 119 or URL: *http://www.expocon.com*

May 12–16 IFIP/IEEE International Symposium on Integrated Network Management '97 (IM '97), San Diego. Contact: Andrea

Erickson, (301)913-9338, ext. 341, *aerickson@conference.com* , or URL: *http://www.ieee.org/comsoc/IM*

May 16–18 MacFair L.A. Burbank. LAMG. Contact: (310)319-1824, or *macfair@lamg.com*.

May 17–18 Computer Marketplace. Fairplex Expo Center, Pomona. National Productions. Contact: 1-800-800-5600.

May 31 Computer Marketplace. Fairplex Expo Center, Pomona. National Productions. Contact: 1-800-800-5600

## Classes, Seminars, Workshops

### February

February 1 An Introduction to Java Applet Programming. Los Angeles. UCLA Extension. Contact: (310)825-4100.

February 1 Java Programming. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611.

February 1-2, 14–15, 28 Microsoft Course 687: Supporting Microsoft Windows NT 4.0–Core Technologies. Los Angeles. UCLA Extension. Contact: (310)825-4100

February 2–9 Introduction to Lingo. Los Angeles. UCLA Extension. Contact: (310)206-1422.

February 4–20 Grand Tour of Macintosh Graphics Applications. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611.

February 5 Introduction to PowerBuilder. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February ▪ World Wide Web: A Hands-On Introduction. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 7 Introduction to PowerBuilder. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611.

February 8 Intro to FileMaker Pro. Santa Monica. LAMG. Contact: (310)319-1821

February 8 Microsoft Word Part I. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 8 Microsoft Excel Part I. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 8 Microsoft Windows 95. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 8 Adobe Photoshop 3.0: Beginning/ Intermediate. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 8 Macromedia Director. Fullerton. Cal

State Fullerton Extension. Contact: (714)773-2611

February ▪ Intro to Photoshop. Santa Monica. LAMG. Contact: (310)319-1821

February 12–13 Hands-On Intro to Photoshop. Santa Monica. LAMG. Contact: (310)319-1821

February 15 Intranets: Bringing Internet Technology to the Corporate Network. Los Angeles. UCLA Extension. Contact: (310)825-4100.

February 15 Director. Santa Monica. LAMG. Contact: (310)319-1821.

February 15 Photoshop Power. Santa Monica. LAMG. Contact: (310)319-1821

February 18–19 Filemaker Pro Relational Workshop. Los Angeles. MacAcademy. Contact: 1-800-527-1914, or URL: *http://www.macademy.com* .

February 19 Creating Your Home Page for the World Wide Web. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611.

February 19 Hands-On Beginning Mac. Santa Monica. LAMG. Contact: (310)319-1821

February 20 Perl Programming. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 21 Hands-On Intro to QuarkXPress. Santa Monica. LAMG. Contact: (310)319-1821

February 22 Introduction to Visual Basic. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611.

February 22 Fundamentals of SmallTalk. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 22 Beginning Macintosh. Santa Monica. LAMG. Contact: (310)319-1821

February 22 Web Pages. Santa Monica. LAMG. Contact: (310)319-1821

February 22–March 22 Microsoft Course 689: Supporting Microsoft Windows NT 4.0–Enterprise Technologies. Los Angeles. UCLA Extension. Contact: (310)825-4100

February 24 Advanced Shell Programming. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 25 A Hands-On Tour of Macintosh and Key Applications. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 25–26 Hands-On Inter-Adv. Photoshop. Santa Monica. LAMG. Contact: (310)319-1821

February 26 World Wide Web: A Hands-On Introduction. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

February 26 Object-Oriented Analysis. Fullerton. Cal State Fullerton Extension. Contact: (714)773-2611

# Resources

**February 28** Hands-On Intermediate QuarkXPress. Santa Monica. LAMG. Contact: (310)319-1821.

## March

**March 1** An Introduction to Client/Server Programming in Java. Los Angeles. UCLA Extension. Contact: (310)825-4100.

**March 1, 14-15, 26-27** Microsoft Course 689: Supporting Microsoft Windows NT 4.0-Enterprise Technologies. Los Angeles. UCLA Extension. Contact: (310)825-4100.

## April

**April 2-4** Digital Video Technology. Los Angeles. UCLA Extension. Contact: (310)825-1047, *mhenness@unex.ucla.edu*

**April 2-4** Machine Translation. Los Angeles. UCLA Extension. Contact: (310)825-1047, *mhenness@unex.ucla.edu* , or URL: *http://www.unex. ucla.edu/shortcourses* .

**April 15-18** Cellular, PCS, and Wireless Data Technology. Los Angeles. UCLA Extension. Contact: (310)825-1047, *mhenness@unex. ucla.edu* , or URL: *http://www.unex.ucla.edu/ shortcourses* .

**April 15-18** Network and Computer Security: Principles and Applications. Los Angeles. UCLA Extension. Contact: (310)825-1047, *mhenness @unex.ucla.edu* , or URL: *http://www unex. ucla.edu/shortcourses* .

**April 23-25** Turbo Codes: Principles and Applications. Los Angeles. UCLA Extension. Contact: (310)825-1047, *mhenness@unex.ucla. edu* , or URL: *http://www.unex.ucla.edu/short courses* .

## May

**May 7-9** User-Centered Prototyping: Process and Product. Los Angeles. UCLA Extension. Con- tact: (310)825-1047, *mhenness@unex.ucla.edu* , ■ URL: *http://www.unex.ucla.edu/short courses*

**May 10** Designing Visual Interfaces. Los Angeles. UCLA Extension. Contact: (310)825-1047, *mhenness@unex.ucla.edu* , or URL: *http:// www.unex.ucla.edu/shortcourses* .

**May 12-16** Communication Systems Using Digital Signal Processing, Los Angeles. UCLA Extension. Contact: (310)825-1047, *mhenness@ unex.ucla.edu* , or URL: *http://www.unex.ucla. edu/shortcourses* .

**May 19-23** Telecommunications Networking: Local, Metropolitan and Wide-Area Networks. Los Angeles. UCLA Extension. Contact: (310) 825-1047, *mhenness@unex.ucla.edu* , or URL: *http://www.unex.ucla.edu/shortcourses* .

**May 28-30** Spread Spectrum Wireless Commu- nications. Los Angeles. UCLA Extension. Con- tact: (310)825-1047, *mhenness@unex.ucla.edu* , or URL: *http://www.unex.ucla.edu/shortcourses*

## User Group Network

# BULLETIN BOARDS

### MULTIZONE

**Beeline BBS.** Multizone (213)934-3437 344-0960, (310)640-3461 637-9189 598-4990, (805)526-6346 287-6182, 268-0060 273-0479, 532-1416 (818)885-7054 799-4768 448-7738 8-N-1, 24 hrs 32-line ▓ board, live games library CD-ROM One month free trial [Exp #162 ]

**Brain Toys BBS.** Multizone (818)968-3550, 557-8697, 707-4476, 700-9877, (213) 225-3809 (310)695-7093 858-0070 MajorMUD ▓ lines Tradewars Doom 2

Backgammon chat Free trial all ages [Exp #162 ]

**Eden BBS—The Electronic Garden.** Multizone (310) 421-2420, 352-4199 838-1707 (714)548-1900, 530-6335 528-7226, 472-9456 (818)336-9322, 336-9322 (909)279-2600 telnet eden bbs.com 24 hrs 14 400– 28,800 64 lines Adults-only "playground." full internet access WorldGroup for Windows Sysop Daniel Vesely [Exp #166 ]

**Gamma Quadrant** ▓. Multizone (714)848-3048,

(213)346-8567, (310)598-3620. Telnet 206 234 134 30, FirstClass Client TCP/IP 206 234 134 30 port ▓ fc.gammaquad ▓ port 3004 8-N-1 ▓ FirstClass Client, 24 hrs , up to 33,600 Email, games, files. extensive Macintosh support. OneNet, Internet, FTP Free trial [Exp #164 ]

**Hotel California.** Multizone (310)407-1300 639-7324 (714)432-5453 768-3318 786-3189, 995-3966, (818) 444-6560, 585-1974, 783-4316 842-9275 telnet:kun-cyb.com 24 ▓ 28,800

Full Internet. 8 lines, ▓ muds. Quake server. Trade Wars. Worldlink ▓ local chat, Game Connection Free trial. [Exp #164 ]

**Mr. Wonderful's Lair.** Multizone (213)261-8055 (818)451-0874 24 hrs ▓ to 33,600 Internet echomail games, shareware, adult. MatchMaker Free 14-day account URL http://www.cns.com/~Barc enas/index shtml Sysop Mr. Wonderful [Exp #164 ]

**Southern California OS/2 User Group (SCOUG)** Multizone (310)596-7825

(public). 596-7815 (members), (714)965-9963 (public). 965-2773 (members) 8-N-1, 24 hrs . 2400–28,800. Free OS/2-oriented software, programming, user group info Sysop Rollin White [Exp #164 ]

**The End ▓ The Line ▓▓▓** Multizone (818)296-1169 783-4575, (213)666-0165 One month free trial, pubs parties email Extensive CD-ROM library, games, chat MatchMaker Adult social board running latest WorldGroup software female run ▓ owned It

Will be fun [Exp #164 ]

### ▓▓

**Los Angeles Macintosh Group BBS.** (310)451 LAMG 8-N-1, 24 hrs FirstClass 16 lines 40,000 calls/month Shareware forums include DTP, multi-media WWW, employment exchange, classifieds, more [Exp #164 ]

**Off-Line BBS (excalibur).** (310)680 0552 24 hrs up to 28,800 Full Internet access, 21 CD-ROMs 19GB online, FREE unlimited 7-day trial. Sysop sherbeee [Exp #163 ]

## Accounting continued from page 70

# BULLETIN BOARDS continued...

Ironically, CD-ROMs are great for primary source material. Because primary materials are public domain government documents, the production costs are minimal. Indeed, a substantial library of primary source tax materials on CD-ROM can be purchased for a hundred dollars. Some materials can even be downloaded directly, online.

Large legal and tax firms can justify paying the small fortune necessary annually to maintain a current bound library, because the overhead is shared by so many practitioners. And large firms can afford it because they cater to giant, high-fee clients.

The problem for publishers, then, is how to sell secondary source materials to the more numerous little operators without sacrificing the happy margins available from the big guys. Their solution is classic price discrimination by product differentiation. Towards this end, small firms get ■ handful of CD-ROMs and their clients have to hope that their CPA ■ smarter than the material they're stamped on. Large firms get ■ full paper library complete with ■ librarian to keep it updated, and their clients consider it a status symbol ■ pay the bill.

In actuality, large firms typically purchase tax services in both paper and CD-ROM format. This is because the price of such redundancy is relatively small—only about $500 a year extra after the identical paper service has already been purchased. And there are situations when CDs are genuinely helpful, such as when a fast and easy answer is all what is sought, or when ■ hardbound volume is being used by some one else.

Tax publishers have confused and perverted the ease of computer research tools with ■ discriminatory pricing scheme that has seriously eroded the ability of traditional tax advisors ■■ access subscription tax services. Practitioners, taxpayers, and anyone else who performs electronic tax research should understand its limitations.

I'm generally as pro-digital as the next guy in these parts, but I maintain that tax research is best performed without over-reliance ■■ hi-tech tools. ■

### Complimentary Reprints
Free reprints of the following are available from David Simon's office in Oakland. (510)893-5753.

# RESOURCES:

Robert L. Black, "Technology: Tips, Tricks and Traps of CD-ROM Tax Research." The Tax Adviser, Parts I, II (October 1995, January 1996)

Lee Knight and Ray Knight, "Tax Research: Faster, Cheaper, Easier with Hi-Tech Tools." Journal of Accountancy 8/96

Ted Needleman, "Our First Ever Electronic Research Face-Off." 12 Accounting Technology 16 (August 1996)

moving our operation out of the most expensive professional market short of the NBA (both in terms of height and salaries), ▬ still can work on company *valuation*.

Venture capitalists and investors look at ▬ whole bunch of measures to value a company. The odds ▬ against your company making it; therefore, the venture community loves it when as much risk as possible is eliminated.

Everyone knows about sales risk: "If you build it, they will look ▬ the movies these days (ask Kevin Costner about *Waterworld*). And marketing risk: "What was that name again?" says the customer with ▬ blank stare.

Not a lot that you ▬ do with these risks in the early going. However, you ▬ do something about *technical risk*. My advice to you, if you want ■ ▬ ■ million—or more—on a startup

> The easiest way to start a business is from home. In the past, this might have seemed like an "unprofessional" option. Today, it's downright high-tech.

is: Using everything we discussed ▬ the last few articles, figure out how to get a prototype— or better yet, a working version—of your product out the door and into the hands of people who ▬ get excited about the technology. Don't

say it can't be done, because this industry was built from the garage up. Don't say you don't have the currency because you can use Silicon Valley money: Options.

The bottom line: You'll be *amazed* how far you get on a mixture of a little cash and a lot of ▬ equity. From what my venture friends tell me, it's the difference between a $1 million and a $2 million valuation. Or a lot ▬

Next up: Is it hot in here, ■ ■ Silicon Valley the craziest place in the world ▬ ▬ a company?! ■

## Resources

# BULLETIN BOARDS continued...

# Resources

# USER GROUPS cont.

## AMIGA

**Amiga–San Gabriel Valley (ATUG).** Meetings: 3rd Sat., 11 am, 1st Southern Baptist Church, Temple City. Contact: Steve, (818) 285-6424. [Exp.#161 ]

## APPLE

**Original Apple Corps.** Meetings: ▓ Sun., West LA area. Apple II and Mac users group. Support for beginners through experts. Contact: Fred Duffy, (310) 450-3336. [Exp.#161.]

## ATARI

**ATESIG—Atari 8-Bit ▓.** 145 Surf Pl., Seal Beach. Cooperative ▓ group for model railroad applications. Contact: (310)430-5433 or D.MCALLISTE2@genie.com [Exp.#165.]

## CAD

**Architecture SIG of ▓ LA Macintosh User Group.** Meetings: 4th Thurs., 7:30 pm, LAMG Resource Center, Santa Monica. Focus on computers in architecture, interior design, landscape architecture and related fields. Guests welcome. Contact: S▓▓▓ Mc-Donough, (310)399-2190 [Exp.#163.]

## COMMODORE

**C▓TUG.** Meetings: 2nd Sun., 12:30 pm, 170 S Olive. Group for friendship ▓ advice ▓ and Commodore computer help. ▓ library of PD ▓ monthly newsletters and much more. ▓▓▓▓ Lou Patush (714)532-1802 [Exp.#166 ]

## GAMES

**Computer Entertainment ▓▓▓▓▓.** Every ▓▓ 6:00 pm, ▓▓ games (Command and Conquer, WarCraft 2, Quake, Duke 3-D. Contact: Mike, (818)571-8805 [Exp.#161 ]

## IBM AND COMPATIBLES

**Greater South Bay PC Users Group.** Meetings: 2nd Thurs., 7:30 pm, behind Torrance main library. Contact: (310)335-2799. [Exp.#155.]

**Los Angeles Computer Society.** Meetings: 2nd Tues., 7:00 pm, Robert Frost Auditorium, Culver City High School, 4401 Elenda St., Culver City. Door prizes, vendor presentations, product review, special interest groups, BBS w/Internet email Contact: (310)471-2726. [Exp.#165.]

**Orange Coast ▓▓ PC User Group.** Last Sat., 8:30 ▓▓▓▓▓▓ 1520 Brookhollow, Ste. 38, Santa Ana. Speakers, ▓▓▓ software library, newsletter, and SIGs Everyone welcome Contact (714) 751-3242, 662-2939 [Exp.#166.]

**Orange County IBM PC Users Group.** Meetings: 2nd Tues., 6:30 pm Speakers, ▓▓▓ software, newsletter, BBS Open to public, all welcome Contact (714)990-0580 ▓▓ orcopug@prodigy.com. [Exp.#162.]

**▓▓ PC-Group.** Meetings: 2nd Wed., 7:00 pm, Valencia Town Center Community Room Contact (805)298-1680 [Exp.#166 ]

**Thousand Oaks Personal Computer Club (TOPCC).** Meetings: 4th Thurs 6:00 pm, Goebel Senior Center, 1385 ▓ Janss Rd, Thousand Oaks Programs ▓▓ targeted at novice-to-expert ▓▓▓ of computer knowledge. Contact Harry (805)495-8325 ▓▓ Eli ▓▓▓▓-0053 [Exp.#166 ]

**Tug-Net** Meetings: Every Thurs. 6:00 pm ▓▓▓▓ Federal Bank 7119 Topanga Canyon Blvd., Canoga Park. Ample parking Contact: (818)249-1629 ▓▓ 884-9441 [Exp.#162.]

**Valley Computer Club (VCC).** Meetings: 2nd Tues., 7:00 pm, Burbank YMCA, 321 E. Magnolia Blvd., Burbank. BBS, PD library, SIGs, newsletter welcome. Contact: Estella McClintock, (818)848-1948; ▓▓ Grayce Hruda, (818)842-3707. [Exp.#166]

**Westside ▓▓ Users Group.** Meetings: 2nd Mon., 7:00 pm, 4117 Overland Blvd., Culver City, CA. Contact: Hershel Wolfson. (310) 838-5812. [Exp.#163.]

## INTERNET

**OS/2 Internet Special Interest Group.** Meetings: 4th Mon., 7:00 pm, 600 Anton Blvd, 2nd floor (at Avenue of Arts), Costa Mesa. Contact: Dave Watson, (714)534-4456. [Exp.#166 ]

## ▓▓▓▓▓

**KAYOS Kaypro User Group.** Meetings: 4th Tues., of even months, 6:00 pm, El Segundo Library, Mariposa and Richmond streets. Contact: (310)379-8339. [Exp.#165.]

## MACINTOSH

**Champions Of The Mac Proletariat (CHOMP).** Meetings: 4th Thurs., 7:00 pm, Avery Auditorium, Pitzer College, Claremont. Q&A, raffle of useful software ▓▓▓ vendor presentations, exchange ▓▓▓ opinions, expertise Contact: Al Seltzer (909)626-7784 or AlSeltzer@aol.com or Mitch Cohen (909)605-1000. [Exp.#165.]

**Los Angeles Macintosh Group (LAMG)** Meetings: ▓▓▓▓ 7:00 pm ▓▓▓▓ Uni-▓▓ High School's Barnum Hall, 601 Pico Blvd. Vendor presentations, raffle, 25+ SIGs, ▓▓▓▓ BBS, monthly magazine. Guests welcome. Contact: (310)319-1821. [Exp.#166.]

**▓▓▓ Gabriel Valley Mac Users Group.** Meetings: 1st Thurs., 7:00 pm, auditorium of Pasadena City Library, 285 E. Walnut St., Pasadena. Speakers, Q&A, drawings, PD library, newsletter, BBS, SIGs. All skill levels. Contact: Mo, (818)790-0913. ▓▓ Bob, (213)684-0178. [Exp.#161 ]

**▓▓▓ Bay Apple Mac User Group.** Meetings: Last ▓▓▓, 7:30 pm, Knob Hill Community Center, 320 Knob Hill, Redondo Beach. Newsletter, PD library, demos, and soft-▓▓▓ raffles. Contact: C.W. Mitchell, (310)644-3315 [Exp.#166.]

**Southern California Macintosh Owners/Users Group (SMOG).** Meetings: ▓▓▓, ▓▓▓, ▓▓▓, Western Digital Bldg., off ▓▓▓ Freeway ▓ 14 Fortune, ▓▓▓▓▓▓ ▓ member presentations, newsletter, information exchange, beginner to experienced. ▓▓▓ Richard, (714)494-0905. [Exp.#164.]

**▓▓▓ ▓▓▓ ▓▓▓▓ Users Group.** Meetings: 4th Sat., ▓▓ ▓▓ Church, 14322 Telegraph Rd., Whittier. Beginner ▓ experienced. Q&A, demos, raffle, hot disk, SIGs, ▓▓▓ter, BBS Contact: (310) 906-0059. [Exp.#166.]

## MISCELLANEOUS

**▓▓▓▓▓ Valley ▓▓▓▓▓▓ Users.** Meetings: 4th Thurs., 7:00 pm, Pomona First Federal Savings Bank Community Room, 9090 Central Ave., Montclair, CA. Contact: Tom Vanderpool, (909)598-1352. [Exp.#161 ]

## NETWORKING

**OCNET—Orange County NetWare Users Group.** Meetings: 2nd Tues 6:30 pm Novell, 18101 Von Karman, 5th floor, Irvine. Specializes in Novell NetWare ▓ solutions Contact: (714)258-7832. [Exp.#166.]

**Orange County LINUX ▓▓▓▓ Group (OCLUG).** Meetings: 1st ▓▓▓, 7:00 pm, California State University, Fullerton, McCarthy ▓▓▓, Room 654 ▓▓▓ State College Blvd, Fullerton, ▓▓ 92831-3599 Open to all interested in the LINUX UNIX clone operating system for IBM PC compatible computers Contact: (714)773-3600 richmc@chaos.fullerton.edu ; mgoddard@chaos.fullerton.edu ; URL: http://chaos.fullerton.edu/oc_lug.html [Exp.#161 ]

# MicroTimes Is Now
# EASIER to Find Than Ever!!

## SAN FERNANDO VALLEY

**APOLLO SYSTEMS**
12154 Hamlin St
(X Street Laurel Canyon & Victory)
N Hollywood, 91606

**B DALTON/SOFTWARE ETC**
6600 Topanga Cyn
(X Street Topanga Plaza)
Canoga Park,

**B DALTON/SOFTWARE ETC**
15301 Ventura Blvd
(X Street & O Galleria)
Sherman Oaks, 91403

**BARNES & NOBLE**
16461-C Ventura Blvd
(X Street Havenhurst)
Encino, 91436

**COMPLETE
COMPUTER CURE**
15122 Ventura Blvd
(X Street Sepulveda)
Sherman Oaks, 91403

**EGGHEAD SOFTWARE**
Topanga Canyon, Suite J
(X Street Lassen)
Chatsworth 91311

**SOFTWARE**
324 S. Central Ave
(X Street Colorado)
Glendale, 91205

**EGGHEAD SOFTWARE**
5608 Laurel Canyon
(X Street Burbank)
N Hollywood

**EGGHEAD SOFTWARE**
18958 Ventura
(X Street Reseda)
Tarzana

**ENVISION INTERACTIVE
COMPUTER**
130 N Central Ave
(X Street Wilson Ave )
Glendale 91205

**LAUREL PARK NEWS**
4346 Laurel Canyon Blvd
(X Street Moor Park)
Studio City, 91604

**NEWSTAND ETC**
316 N San Fernando
(X Streets Palm & Magnolia)
Burbank, 91502

**PC CLUB**
19907 Ventura Blvd
(X Street Oakdale & Winnetka)
Woodland, 91364

**PC SERVICE**
14007 Ventura Blvd
(X Street Woodman)
Sherman Oaks 91423

**PC SERVICE**
21601 Ventura Blvd
(X Street Canoga Blvd.)
Woodland Hills 91364

## LOS ANGELES

**B DALTON/
SOFTWARE ETC**
328 Santa Monica Place
(X Streets 4th & Broadway)
Santa Monica, 90401

**DAV TECH**
6314 Hollywood
(X Street Vine)
LA, 90028

**EGGHEAD SOFTWARE**
7162 W Beverly Blvd
(X Street La Brea)
LA, 90036

**OP AMP BOOKS**
1033 N Sycamore
(X Street Santa Monica)
LA, 90038

**PAK COM COMPUTER**
401 S Vermont #4
(X Street 4th)
LA, 90020

**PC CLUB**
Westwood Blvd
(X Street Santa Monica)
Westwood, 90024

## SOUTH BAY

**ADVANCED COMPUTER &
TECHNOLOGY**

**EGGHEAD SOFTWARE**

**EGGHEAD SOFTWARE**

**HAWTHORNE LIBRARY**

**KAMFOZ**

**KB COMPUTER**

**KRISHNA COPY CENTER**

**MICROSOURCE COMPUTERS**

**NEXCOM**
24231 Hawthorne Blvd

**PC CLUB**

**US COMP**

**US COMP**

**US COMP**

Or Call
Toll Free
"Super Stop"
Close to You!

# USER GROUPS cont...

# ASSOCIATIONS

OS/2 Networking Special Interest Group. Meetings 3rd Sat. 11 00 am ▓▓ Anton Blvd. 2nd floor (at Avenue of Arts). Costa Mesa Contact Steve Schiffman, (714)531-0376 [Exp.#166 ]

## ▓▓▓

Southern California OS/2 User Group (SCOUG). Meetings 3rd Sat. 9 00 am. 600 Anton Blvd, 2nd Floor (at Avenue ▓ the Arts), Costa Mesa Exchanging information and providing mutual assistance to others about

OS/2 Warp Free Contact Rollin White (310)493-1674 [Exp.#166]

## PROGRAMMING

OS/2 Programming Special Interest Group. Meetings 11 00 am. ▓▓ Anton Blvd, 2nd floor ▓ Mesa. Contact Terry Warren. (714)633-5467 [Exp.#166]

## TANDY

San Gabriel Valley Technology Users Group. Meetings 2nd

Fri. 7 00 pm Arcadia Park Senior Citizen's Center, 405 S Santa Anita Ave. Arcadia Support for Tandy and IBM compatibles, BBS. newsletter. RAM session Contact Jack Nock, (818) 578-0411 [Exp.#162 ]

## WINDOWS
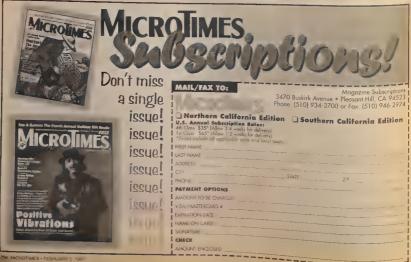
Microsoft Windows NT Study Group. Meetings 2nd and 4th Sat 6 00 pm. MicroLAN Technologies, Inc 110 N Vincent Ave. West Covina A professional association of Windows

NT enthusiasts to enhance our skills, knowledge, and career opportunities Contact Manmohan Bharma (818) 339-1391 [Exp.#166 ]

WINNERS—Windows usERS. Meetings 2nd Sat . 9 00 am. Orange Coast College Fine Arts #116, 2701 Fairview, Costa Mesa Friendly helpful questions, new technology, newsletter disk library, everyone welcome ▓▓▓ Contact (714)644-5782 [Exp.#163 ]

Independent Computer Consultants Association Meetings 2nd Thurs . 6 00 pm. Sportsman's Lodge 12825 Ventura Blvd. Studio City An organization promoting professionalism exper tise, and ethics in the provision of computer services and awareness of the availability of such services by independent professionals Call Ben Shulman. (310)872-1811 [Exp.#166]

Software Council Of Southern California.

Meetings usually 4th Wed . 6 00 pm Long Beach Marriott main ballroom 4700 Airport Plaza Dr , also breakfasts and luncheons around SoCal A nonprofit trade association whose membership is comprised of software development organizations, as well as companies providing support and services to the local software industry Contact Bill Manassero (213)328-0043 or URL http //www scsc org [Exp.#161 ]

Apple Computer, Inc.

AST COMPUTER

brother

Canon

COMPAQ

EPSON

HEWLETT

IBM.

NEC

OKIDATA®

Packard Bell.

TEXAS INSTRUMENTS

TOSHIBA

## WorldFlash

Another entry in the news browser market is WorldFlash Software's new Internet-based news headline, stock quote, weather and email agent for Windows 95/NT4.

WorldFlash News Ticker software is freely downloadable from *http://www.scroller.com* . Once installed it works with either Netscape Navigator or Microsoft Explorer to create windows that show the selected information scrolling by. If you want, you can use WorldFlash to check your email for you as well.

You can track up to seventy different stock symbols and market indices and select from over 1,400 weather reports for cities around the world. The newest release of WorldFlash introduces a FlashSearch feature that automatically submits your query to your choice of Internet search engines. A sports ticker is in the works.



WorldFlash News Ticker gets up-to-the-minute headlines from some two dozen news sources. You double click on the headline to get the full story. Sources include seven Reuters news feeds, Yahoo, CNN three feeds, The Nando Times, C|Net News, *USA Today*, CMP WebTech, *San Francisco Examiner*, *Boston Globe*, *Chicago Sun-Times*, *MSNBC*, the *Philadelphia Daily*, the Metro Section from the *Washington Post*, *Seattle Times*, and the Florida Section from the *Miami Herald*.

For international customers WorldFlash offers news from the *Jerusalem Post* Internet Edition, Japan Asahi News (English edition), *Die Welt*, *Prensa* (Spain), *Aftenposten* (Norway), *Der Standard* (Austria), NRC Holland, *The Malaysia Star*, ABC, Radio News, *Sydney Morning Herald* (Australia) and *Thai Business Day*.

## Useful Downloads

Finally, stop by Walnut Creek CD-ROM's Simtel Web site *http://www.simtel.net/simtel.net/win95/inet.html* where you can download a list of shareware Internet news agents for use with Windows. There you'll find programs that will let you download stock quotes, football and baseball scores, weather, and more.

example, can create up to five separate screen names on one account, at no extra charge.

Some electronic-privacy groups don't believe consumers should need to mask their identities or resort to other so-called privacy survivalist tactics to protect themselves online. "That's unfair and unreasonable," says Marc Rotenberg, director of the Electronic Privacy Information Center in Washington D.C. "We think companies collecting personal information should carry more information to protect privacy....and we encourage technologies that help eliminate the collection of private information."

## 7. Wipe Out Directory Listings

Web email directories make it easy to look up an old friend or former co-worker who moved out of town. But what price convenience? Directories such as Big Book, Four11 and WhoWhere? have collected email addresses for millions of people in and outside the United States, and spammers are mining those databases for their own lists.

Cut them off at the pass by writing the directories and requesting that they remove your name, email address and other personal information from their database. Some of the largest directories are:

American Directory Assistance (*http://www.abii.com/lookupusal adp/peopsrch.htm*)
Bigfoot (*http://bigfoot.com*)
Four11 (*http://www.four11.com*)
Internet @ddress.finder (*http://www.iaf.net/*)
Search America (*http://www.searchamerica.com/*)
Switchboard (*http://www.switchboard.com*)
WhoWhere? (*http://www.whowhere.com*)
World E-mail Directory (*http://www.worldemail.com/*)

Of course, once you're out of the directory listings, people with legitimate reasons for finding you won't be able to. As an alternative, some directories will keep your email address private until you give the OK, similar to caller I.D. WhoWhere calls its service "Who's There," and Switchboard calls its "Knock Knock."

Directories have also started posting software sentries on their respective database search engines to block spammers from collecting large numbers of user email addresses at a time. "A lot of people out there would love to get their hands on the data we have, and we have to be constantly vigilant they're not getting it from us," says Richard Rock, WhoWhere? product manager.

## 8. What Not To Do

Some individuals believe the only way to cure spammers is with a dose of their own medicine, namely mail bombs or other acts of Net terrorism. A bit of advice: don't do it.

Mail bombs are created by setting up an email program to repeatedly mail a message to the offending party, sometimes with multimegabyte "BLOB" attachments tagging along for the ride.

Satisfying as this may sound, mail bombs cause big trouble—usually for the sender—by tying up their Internet service provider's mail server and the mail server of the spammer's ISP. Worst case scenario: you could lose your account.

Ultimately, knowledge, not revenge, is the best defense. ■

███████ • FEBRUARY 1 ████ ████

# CLASSIFIED
## ADVERTISING SECTION

## Data Recovery

## Hardware

## Duplicator Hardware

# ADVERTISER BY CITY INDEX

FOR YOUR CONVENIENCE, HERE IS A LIST OF ADVERTISERS BY COUNTY AND CITY. PLEASE SEE THE ████████ ████ ON ████ 258 ████ THE ████ NUMBER ██ ██ A ████████

## LOS ANGELES COUNTY

**Burbank/Glendale**
1WEBSTUDIO
Computer Network Communications
Envision
Hal Computer Systems
Legend Systems
Microtronic Tech Computer
North American Computer Classes
Only Multimedia ISP
Quik Internet of Burbank

**███ ██ Industry**
Advanced Micro Integration
██ Computers
Cibcom Computers, Inc
Comtrade
Cyber Quest Electronics
Direct Net
Interwave Multimedia
Kingsley Computers
MAG InnoVision
Max Computer
MicroTek
Microtronic Tech Computer
████████
PC Club
PC Portable Manufacturer Inc
PC Warehouse
Royal Electronics, ██
Unisource Inc
███ Systems

**████████ Heights/Walnut**
American Mega Shows
Binomial Systems
Domino Computer
Gensys
Maxpoint Computers Inc
Senet

**Hawthorne/Lawndale**
ATC Computer
MicroSource Computers
PC Club
PC Systems Design

**Inland Empire**
Computer Market ████
Domino Computer
Microsel
PC Club

**Long ████ ██████**
KB Computer
██████ Services for ███ Internet

**████████ Angeles**
4 Link ████████
██ Multimedia
AddressNet
Art Media
A.T.C
BWI
CompuTopia
Computer World
Digital Computer
DK Micro
Einstein Computer
EZ Cosmo
Gem-Dot Net
HA Computer & Laser Tech
███
████ Technology
Input Automation
International Computer & Networking
International Educational Systems
LA ████████
Leo and Internet
Link ████████
Maximum R&D
Microwaredns computers
Microtown Technology
Netmagex Media
Only Multimedia ██████
Pepcom
PC ████
Perlman ██
████ ████████ Communications Inc
████████
Theta Computer
██████
██████

**Pasadena**
Advanced Computer Center
Consume Computer Cure
Envision ████████
Integrated Technologies Classes

Interace
MicroSource Computers
██ Sierra College
Pasadena Computer Center
PC Systems Design
████████ Sam's
TCC
The California Computer

**████ ████ Valley**
AAA ████████
Advanced Computer ██ Technology
███████ Systems
Alpha Computer
████ Computer
Art Tech Multimedia
Azusa ████
Bason Computer
Complete Computer Cure
Domino Computer
Earthlink ████onx
Hal Computer
IBA Computers
Info ████
████ Light ████████
Maximus
Metro ████
Mt. Sierra ████████
Net Plug Network
North ████████ Computer Consultants
PC Club
PC 951 Inc
PC Warehouse
Pioneer Trade Computer Show
Quality Time Computers
P-Tech Computers
████ Hard Systems
Surenet
Type II Technology
Ultima Computers
Unitek Computer ████████
VidCom Computers
Wesco Computers

**████ ████ Valley**
3-G Computers
Advanced Computer & Technology
Azusa Pacific University
C & G Computer Software Outlet
Computer Marketplace
Computer Pacer
CompuQuests
ES ██ Technology
██ Computer
Flash Tax
General Internet
Gus Network
Integrated Digital Technology
Ironlight Digital
Lightside
Linkline Internet ████████
M.A. Micro
Maximus
Memories
PC Portable Manufacturer Inc
PC Warehouse
Symphony Computer
Syscom
Syscon Technology U.S.A
TCC
Tech USA
Tower Records
Unitech National Inc
West Tech

**Santa ██ Springs**
Hotel California
Kinetic Computer Systems
██ Warehouse

**████ Monica/Marina Del Rey**
Computer Business Center
MAC ████████
Micro ████████
Multimedia Computers
████ Limited
Princeton Graphics

**South Bay**
Advanced Computer & Technology
Candidate Dominguez Hills
Compu-Com ████████
Domino Computer
Input Automation ████████
Kamino ████
EE Computer
Info ████████
MA ████████
NeuByte
██████
PC ██

PC Earth Corporation
PC Market
PC Warehouse
Princeton Graphics
Quanta Micro Corp
Unisource Inc
U.S. Comp

**████ ████ Angeles**
Advanced Computer ██ Technology
Cibcom
Maximus
Micro Base
PC Club
Tower ████████
Unitek Computer Stores

## ORANGE COUNTY

**████████ ██████ Hills/**
████████ Computer Corp
Academics Solution
Access Point
Accurate Technologies Corp
Compu-Soft
Computer Learning Center
Delta ████████ Services
CMS-Memory Upgrades
██ Class Software Co
Genesis Computer Systems, Inc
Mac ██ PC Gallery
MagicTek Computers
Micro DataNet U.S.A. Inc
Navzak Communications
Nyton
PC Planet
Power Computers Tech
Quik Internet ██ Anaheim
Skytek Networks, LLC
████████ Media
ZYKEL

**████████**
American Tech Enhance Computer Corp
Digital Dillusion
MicroSource Computers
PC Systems Design
Software Education of America, Inc
USM

**████ Park/Cerritos/**
**██ Miroda/Norwalk**
Advanced Computer Center
Advanced Computer & Technology
Compu-Soft
Computer Marketplace
Digital Dillusion
Micro City
Prosoft

**Capistrano/Trabuco Canyon/**
**Santa Margarita**
MicroCity
Prinnetket Services for the ████████

**Corona/Placentia/Yorba Linda**
Axel Systems
Future Computing Solutions
████████

**Cypress/Hawaiian Gardens/**
**La Palma/Los Alamitos/**
**Stanton/Westminster**
1-888 CD Movies+ MPEG
D-Media Company
Maximus Computer
Quanta Micro Corp
Sigma Computers
Super Computer Inc
TTD Computer Systems
Ytg Unit Inc

**████ Mesa/Fountain Valley**
1 888 CD Movies+ MPEG
D-Media Company
Domino Computer
Drive Service Co
Kamino
PC Market
SMS
Softwareknife

**Garden Grove**
C&G ████████ ████ware Outlet
Cibcom Computer Inc
Compuss International
CompuNote
ProCom ████ Co
Shinno Electronics Communications Inc

**Huntington Beach**
Computer Liquidation Center
First Internet Alliance
Input Automation
Quik Internet of Huntington Beach

**Irvine/Newport ██████**
Advanced Computer & Technology
Anaware Software
Computer Palace
Domino
HiTek
PC Market
PrimeNet Services for ███ Internet
Prism
Quik Internet of Irvine
Sonic Research
Surenet
UCI Extension
USM

**████████ ████ Viejo**
Computer Max
Kamfoz
Logicache Computer, Inc
Macro Tech
PC Market
Princeton Graphics
Sam's Digital Imaging
Sam's Photo

**████████ ████ ████**
ACI Computers
ACP Advanced Computer Products Inc
American Computer ██████ware Corporation
Compu-Depot
Computer Direct
Computer Max
Computer Shack
Computx
DataNet
Dollar Computer Corp
Global Pacific Internet
JCL Co Ltd
MAG InnoVision
NexCom
PC Club
PC Market
Super Show Productions

## RIVERSIDE COUNTY

Human Compute
████████ Internet Access, Inc
PC Club

## SAN DIEGO COUNTY

4D Net
Art Media
MAC ████████
Micro City
PC Club
Shinno Electronics Communications Inc
Simply Internet

## NORTHERN CALIFORNIA

1 888 CD Movies+ MPEG
APPRO International Inc · San Jose
ArtMedia · Santa Clara & San Jose
California Society of CPA's · Redwood City
D Media Company
Future Computing Solutions
Input Automation
Intelinks
MAC InnoVision
Max Group · Fremont
NCA
Primenet Services for the Internet
RT Computers · San Jose
Shinno Electronics Communications Inc
Surtomex · Sunnyvale
Sort Expo 96
Superbom · Milpitas
Unitech National Inc
Vettel
WestCon

## OUT OF STATE

MicroSource-computers · Texas
North American Cad Co ██████
Propeller Portable Computer Products Inc. · Utah
Winbook Computer Corporation · Ohio

252 MICROTIMES • FEBRUARY ██ 1997

DVORAK'S LAST COLUMN • BY JOHN C. DVORAK

# The Apple PC—Thinking The Unthinkable

## Or Don't Blame The Messenger, It's Not My Fault

# As readers

of my columns in *PC Magazine* and elsewhere know, I've concluded that Apple will shortly roll out a PC clone of one sort or another for one obvious reason — to save the company.

The bigger question is what form this new product will take, not whether it will be done. Bill Gates has been spending far too much time at Apple for this *not* to occur. Apple's market share has been slipping, and as long as the market shares for PCs are lumped together with Macintoshes this slide will continue. The only way to defeat the trend is to bring out a PC clone.

The most recent rumors have it that at some point Apple will use the Exponential 533 MHz PowerPC chip and an emulator to make the fastest Windows machine on the market. This concept is slightly laughable for a number of reasons. Although emulation of the 68000 worked fine for the early PowerPC and the necessary backward compatibility as Apple transitioned from the 68000 family to the Power PC, let's not get carried away with this idea regarding Windows. Few Mac users realize that over time the PC architecture has evolved to be optimized for Windows. The video cards in particular are designed with Windows in mind. To shoehorn this onto a Mac is not practical.

A PowerPC running Windows 95 via X86 emulation also loses a generation as MMX hits the market. I seriously doubt that the MMX features can be incorporated into the emulation code quickly. In fact MMX may be part of a bigger strategy by Intel to stave off such a notion.

Also there is a marketing problem. A PowerPC Mac that *can* run Windows is a dual-purpose machine whether someone wants a dual-purpose machine or not. If I'm in the market for a Windows machine, why should I buy the extra functionality of Mac compatibility when I'm not interested in it? I know Mac users find it hard to believe, but most PC users have no interest in owning a Mac. With a dual-purpose machine I would immediately assume that I'm spending too much, no matter what the price. I'd also have compatibility suspicions.

## Why Intel Inside?

On the other hand, if Apple rolls out a raw PC using an Intel Pentium, I can be assured of real compatibility and can be further assured that I'm not buying things I really do not want. While it's possible that a 533 MHz PowerPC (or even one faster) could be a fast Windows machine under emulation, you can be certain that because of the complexity of these chips that something wouldn't work at all. Some software or who knows what would simply not run. The skittish public would avoid the machine like the plague.

An Apple PC must be a standalone system— pure Windows 95 or OS/2 type-machine running an Intel (or AMD or Cyrix) chip. Apple cannot make the mistake of thinking that these machines are going to be sold to Apple Mac aficionados. A Mac user isn't interested in a PC and many never will be interested, ever. And it's doubtful that they would give a damn about an Apple PC as long as the Mac stayed on track. In fact, they might be convinced that the cash flow from an Apple PC should make enough easy profits to assure the Mac of a long life.

There is another argument for an Intel-based system. Over the years Intel has taken over most of the design R&D for the standard PC. Dell, Gateway and most of the others don't need to spend a nickel on serious PC board engineering. That's why they have such nice numbers in their annual reports. Apple spends a fortune, by comparison, on design.

The disadvantage to this is that if Intel ever pulled the plug on Gateway or Dell, the two companies would have some problems. For Apple, an Apple PC would be an ancillary money-maker. If Intel caused a problem, so what? Besides, the opposite would probably happen, and this is something Apple watchers should note. Intel wants to own the world. It would fall all over itself to make an Apple PC a huge success in hopes of getting Apple away from the PowerPC camp altogether. As far as Intel is concerned, these other chips should all disappear.

The biggest thing Apple has going for it is its brand name, and that's why an Apple PC would be a huge success. The actual naming of this machine, though, might be a problem, as I'm sure Apple insiders might argue for a machine called the Mac PC, which is just plain ludicrous. It should be named the Apple PC, plain and simple.

Apple can say that it makes Macs and PCs, and you can have either or both from the same manufacturer—Apple. Apple has done its best to design good-looking machines, and this will come in handy as it's more and more apparent that "good looking" machines sell better than ugly machines. This trend should benefit Apple.

## Potential Downsides?

What are the downsides to an Apple PC? To Mac users it may turn out that the PC business for Apple would be so profitable that it would shelve the Mac altogether. Apple would deny this, for sure, but it is always a possibility.

Another downside is that instead of using a standard Intel design Apple would design its own PC, and the result would be a poor-performing oddball machine too expensive to compete.

I tend to fear this latter problem the most, as Apple might opt for a backplane design whereby a consumer could buy a card cage-type computer and throw in a CPU card from Intel, or a Mac card, or both. There is a certain appeal to this type of architecture, but it costs more money to design and more money to manufacture than just taking the Intel-designed motherboard and plopping it into an Apple case.

I also fear that Apple will try to do too much value-added to what should be a simple box. Marketing Macs to an audience of yuppies and artists who don't like fiddling with computers is not the same as selling clones to people who are used to problems. There are a lot of proud engineers at Apple who would like to put their imprint on Windows. They should avoid this desire.

The biggest mistake, though, that Apple can make is to *not* bring out an Apple PC. With the new practical managers at Apple I suspect this mistake won't be made, and we'll see an Apple PC this year. Hopefully they'll keep it simple and do it right. ∎

# The smart system for your growing business.

Starting a new business is an exciting adventure.

It takes guts and a passion for adventure to be your own boss.

To be successful, you need to make smart decisions.

At Supercom, we specialize in building systems for the long haul.

Systems designed to fit your needs. Systems with POWER.

Like our 180MHz Pentium® Pro Processor based P2180MD Touch™ system pictured above.

When you're ready to invest in your business, ask your dealer for a Touch system.

Supercom Touch systems. The smart investment for your growing business.

**Supercom**
**1-800-888-1888**
http://www.supercom.com

The Intel Inside and Pentium® Pro Processor logos are trademarks of Intel Corporation. All other product and company names are the trademarks or registered trademarks of their respective owners.

California • Colorado • Illinois • Minnesota • New Jersey • Oregon • Pennsylvania (Pittsburgh) • Texas (San Antonio) • Texas (Dallas) • Texas (Houston) • Utah • Washington • Toronto • Vancouver • Montreal • London